CHEM161 GENERAL CHEMISTRY I

3 credits (CRN 62098)
Tuesday and Thursday 11:30 AM to 12:45 PM
`Imiloa 111

INSTRUCTOR:	**Martine Bissonnette**
OFFICE:	**`Imiloa 119**
EMAIL:	**martineb@hawaii.edu**
OFFICE HOURS:	**Monday 1:00-2:00 pm**
	Tuesday and Thursday 12:45-2:00 pm
	Friday - by appointment
EFFECTIVE DATE:	**Spring 2018**

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

Basic principles of inorganic chemistry with an emphasis on problem solving. First course of a two-course sequence designed to meet the one-year General Chemistry requirement for pre-med, science and engineering majors. Topics include chemical calculations, electronic structure, chemical bonding, states of matter and solutions. (2.5 hours lecture)

Pre-Requisite(s): A grade of "C" or better in Math 103 or higher, or placement into Math 135 or consent of instructor. Co-Requisite(s): Registration in CHEM 161L. Recommended Preparation: Student should have taken high school chemistry, CHEM 100, or CHEM 151.

STUDENT LEARNING OUTCOMES

Upon completion of the course, the student will be able to:

1. Use the mole concept in solving stoichiometry problems involving solids, liquids, gases and solutions.
2. Balance chemical equations, classify reactions, identify and analyze the role of the chemicals involved in chemical reactions.
3. Predict the behavior of gases while undergoing changes in volume, pressure, temperature and quantity.
4. Manipulate thermochemical equations and calculate the amount of energy involved in chemical reactions.
5. Predict physical and chemical properties of elements based on electronic structure and location in the Periodic Table.
6. Predict physical and chemical properties of compounds based on chemical bonding, geometry and intermolecular interactions.

COURSE TASKS

We will be covering 10 chapters over the semester which means we will be going at a brisk pace. Everyone's background is different and some of you might have taken more chemistry classes but allow for **4-8 hours of work per week** in addition to lectures. Maybe more time for some of the more challenging chapters. This includes reading the textbook, reviewing notes, and working on assignments. Here is the recipe for success:

- Show up for every class.
- Read the material before class.
- Take notes and work through problems as they are presented in class.
- Review material, ask questions to your teacher, work with classmates.
- Submit all the work on time.
- Do additional problems to prepare for exams (sourced from: masteringchemistry study area, websites, instructor).
- DO NOT PROCRASTINATE and cram the night before the exam – the outcome is rarely good!

ASSESSMENT TASKS AND GRADING

Grading: The Final Grade will be based upon 600 points (the lowest score out of 100 will be dropped).

1. **Attendance and quizzes (100 points)**
2. **Homework - Mastering Chemistry & Laulima (100 points)**
3. **Mid-Term Exam #1 (100 points)**
4. **Mid-Term Exam #2 (100 points)**
5. **Mid-Term Exam #3 (100 points)**
6. **Final Exam (2 x 100 points)**

Extra credit: you may earn up to 2% doing extra credit work which will be made available throughout the semester.

The final exam will be cumulative and will consist of the Standardized American Chemical Society National Exam.

Students can check their grades and examination scores on Laulima gradebook at anytime. The gradebook is usually updated on Sundays. The following scale will be used to determine final grades:

A: 90 - 100 %; B: 80 – 89 %; C: 70 - 79 %; D: 60 - 69 %; F: below 60 %

Grades of I, W, CR, CN are described in the current college catalog. The last day for withdrawals (W, CR, CN) is **March 26, 2018** , after that date, the instructor will sign withdrawals only in cases of extreme or unusual circumstances, such as 1) a certified medical reason, or 2) a death in the immediate family. Grade-related excuses are unacceptable. **Students who no longer attend class and who DO NOT OFFICIALLY WITHDRAW from the course will receive "F" grades.**

Students must present the "Request for Incomplete" form to their instructor prior to the last day of instruction. "I" grades will be given only to students who are achieving passing grades and are very close to completing the course. Only serious reasons such as those listed under the withdraw policy, will be accepted.

LEARNING RESOURCES

1. Internet access.
2. Access to Mastering Chemistry for online homework, electronic textbook, and tutorials. Go to masteringchemistry.com and register/login. Join the course using the course ID **MBISSONNETTE62098**
3. Chemistry: A Molecular Approach, Fourth Edition **by Tro, Nivaldo J,** 4th edition.
4. Scientific Calculator. Programmable calculators and cell phone calculators will NOT be allowed!!
5. PowerPoint Slides. (Laulima: **Resources**).

Additional Information

Schedule:

Week	Day	Date	Chapter/Event	Topic/Event
1	Tuesday	8-Jan	Intro	Syllabus/Math Review
	Thursday	10-Jan	1	Matter, Measurement, and Problem Solving
2	Tuesday	16-Jan	1	Matter, Measurement, and Problem Solving
	Thursday	18-Jan	2	Atoms and Elements
3	Tuesday	23-Jan	2	Atoms and Elements
	Thursday	25-Jan	3	Molecules, Compounds and Chemical Equations
4	Tuesday	30-Jan	3	Molecules, Compounds and Chemical Equations
	Thursday	1-Feb	Review	Lecture
5	Tuesday	6-Feb	Exam 1	Good luck!
	Thursday	8-Feb	4	Chemical Quantities and Aqueous Reactions
6	Tuesday	13-Feb	4	Chemical Quantities and Aqueous Reactions
	Thursday	15-Feb	4	Chemical Quantities and Aqueous Reactions
7	Tuesday	20-Feb	4	Chemical Quantities and Aqueous Reactions
	Thursday	22-Feb	5	Gases
8	Tuesday	27-Feb	5	Gases
	Thursday	1-Mar	6	Thermochemistry
9	Tuesday	6-Mar	6	Thermochemistry
	Thursday	8-Mar	Review	Lecture
10	Tuesday	13-Mar	Exam 2	Good luck!
	Thursday	15-Mar	7	The Quantum-Mechanical Model of the Atom
11	Tuesday	22-Mar	7	The Quantum-Mechanical Model of the Atom
	Thursday	24-Mar	8	Periodic Properties of the Elements
12	Monday	26-Mar		*Last day to withdraw with a W grade*
	Tuesday	*27-Mar*		*Spring Break*
	Thursday	*29-Mar*		*Spring Break*
13	Tuesday	3-Apr	8	Periodic Properties of the Elements
	Thursday	5-Apr	Review	Lecture
14	Tuesday	10-Apr	Exam 3	Good luck!
	Thursday	12-Apr	9	Chemical bonding I: the Lewis Model

Week	Day	Date	Chapter/Event	Topic/Event
15	Tuesday	17-Apr	9	Chemical bonding I: the Lewis Model
	Thursday	19-Apr	10	Chemical bonding II: Molecular Shapes, Valence Bond Theory, and Molecular Orbital Theory
16	Tuesday	24-Apr	10	Chemical bonding II: Molecular Shapes, Valence Bond Theory, and Molecular Orbital Theory
	Thursday	26-Apr	10	Chemical bonding II: Molecular Shapes, Valence Bond Theory, and Molecular Orbital Theory
17	Tuesday	1-May	Review	Lecture
17	TBD	5-11 May	Finals week	Good luck!

Class policies:

Class topics and exam schedule are found in a separate document, posted on Laulima.

a. Math skills and basic concepts

This course relies heavily on math including algebra, logarithms, graphing. If you feel you need to review these concepts, let me know immediately and I will suggest tools to help you. It is assumed that you have mastered the concepts of significant figures, unit conversions, calculating molar mass, balancing equations, etc… It is up to you to review these concepts as they will not be revisited in class and will be the basis for more advanced problem solving.

b. Attendance and quizzes

We will meet twice a week – you are expected to attend every class and will lose points for missing class. Short quizzes (closed book) will be given at the beginning of almost every class – do not be late for class – there will be no make up for missed quizzes. If you are unable to attend class, you should contact the instructor in advance to give notification of the absence and make necessary arrangements. For those students who receive financial aid and fail to attend the first week of classes without making arrangements with the instructor, the student's name will be submitted to the Financial Aid Office. The student will be denied financial aid for the class that he/she is not attending. In addition, it is solely the student's responsibility to withdraw from the class or attend the class and pay the tuition.

c. Mastering Chemistry & Laulima

The assignments will be available on masteringchemistry.com. The deadline is set on the projected date that the chapter will be completed in class, 10% per day will be deducted for late submissions, capped to 50% - better late than never.

The purpose of the Laulima assignments is to help you learn through interactions and feedback. The assignments will be done with a pre-assigned group. Each team member must participate in the discussion and one team member (assigned by the instructor and will change each time) will be responsible for posting the final answer. If you do not participate in the group discussion, you get zero. If you do not post the final answer, the whole group gets zero.

d. Mid-term Exams

All exams are closed-book exams and will consist of a combination of multiple choice, matching and short-answer questions. Each mid-term exam is administered over an entire class period of 75 minutes. Only one missed mid-term exam can be made up if it is accompanied by a justification (doctor's note, police report, obituary notice, etc…).

e. Final Exams

The final American Chemical Society exam will consist of 70 multiple choice questions and cover all topics presented in the course (i.e. cumulative). This exam is closed-book and administered over 2 hours during 'finals week'.

f. Extra credit

Additional activities such as attending chemistry forums, preparing a short topic presentation, participating to outreach chemistry projects will earn extra credit. Opportunities will be announced in class.

g. Classroom behavior

A high level of maturity and professionalism is expected in the class. Distractions which will not be tolerated include: talking, audible cell phones, texting, social media use, making offensive remarks, eating in class, sleeping in class, packing and leaving class early (unless you have notified the teacher), and arriving late. You will be given ONE warning – if the behavior continues you will be asked to leave the class and marked absent.

h. Special learning needs

If you have special learning needs, inform your instructor at the beginning of the semester.

i. Schedule

The schedule is subject to change. Any changes to the course schedule will be announced in class and on line. You are responsible for keeping track of these changes.

j. Academic Honesty

Working with others to study is encouraged but each student is responsible for presenting his/her own work at all times. Cheating on any assignment, quiz, or exam will earn you an F and the Department Head and Office of the Dean will be notified.

The rules are:

- Absolutely no talking once the exams begins. If you have a question, raise your hand and I will come to you.
- Keep your eyes on your own paper. If I see you looking at other people's paper, I will assume you are cheating and will ask you to leave the class and you will receive an F.
- No textbook, no notes, no smartphones – only pen, pencil, eraser and scientific calculator are allowed. I will provide required formulas, constants, and a periodic table. I will tell you what will be provided before each exam.
- No listening to an audio device allowed.

Process for Dealing with Academic Dishonesty (Student Conduct Code)

In cases of suspected or admitted academic dishonesty, the instructor involved shall attempt to discuss the matter with the student. The instructor may bring the matter to the attention of the departmental chairperson for consultation. The instructor may require the student to redo the assignment, give a failing or reduced grade for the course, and/or refer the student to the Vice Chancellor for Student Affairs or designee through the Department Chair for possible college action under the Student Conduct Code. The Vice Chancellor for Student Affairs or designee shall pursue such cases to determine appropriate disciplinary actions if, after a preliminary investigation, it is his/her determination that probable cause exists to establish that an act of academic dishonesty took place.

UH Policy on email communication

The electronic communications policy adopted in December 2005 establishes the University of Hawai'i Internet service as an official medium for communication among students, faculty, and staff. Every member of the system has a hawaii.edu address, and the associated username and password provide access to essential Web announcements and email. You are hereby informed of the need to regularly log in to UH email and Web services for announcements and personal mail. Failing to do so will mean missing critical information from academic and program advisors, instructors, registration and business office staff, classmates, student organizations, and others.

DISABILITIES ACCOMMODATION STATEMENT

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 encouraged to contact the Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Ann Lemke can be reached at 235-7448, lemke@hawaii.edu, or you may stop by Hale ʻAkoakoa 213 for more information.