CHEM161  GENERAL CHEMISTRY I
3 credits (CRN 60049)
Tuesday and Thursday 10:00 AM to 11:15 PM
`Imiloa 111

INSTRUCTOR: Martine Bissonnette
OFFICE: `Imiloa 119
EMAIL: martineb@hawaii.edu
OFFICE HOURS: Tuesday/Thursday 9:30-10:00 am & Thursday 11:30 -1:00 pm
Other times/days - by appointment
EFFECTIVE DATE: Spring 2019

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 9 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: libretex, chem101, sciencegeek.net, 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 700 points (the lowest score out of 100 will be dropped).

1. Attendance, worksheets, and quizzes (100 points)
2. Homework (100 points)
3. Mid-Term Exam #1 (100 points)
4. Mid-Term Exam #2 (100 points)
5. Mid-Term Exam #3 (100 points)
6. Mid-Term Exam #4 (100 points)
7. Final Exam (2 x 100 points)

Extra credit: you may earn up to 30 extra points 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. **It is a very challenging 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 25, 2019**, 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. Required: Internet access and Laulima.
3. Required: Textbook - download free pdf from: https://openstax.org/details/books/chemistry Cost $0
4. Required: Scientific Calculator. Programmable calculators and cell phone calculators will NOT be allowed during exams!!
5. Required: PowerPoint Slides and worksheets. (Will be posted on Laulima under Resources).
6. Highly Recommended: SI Sessions or Tutoring at Trio
7. Highly Recommended: OLA (Online Learning Academy) http://manoa.hawaii.edu/ola/
8. Highly Recommended: Tutor.com

Additional Information

Schedule:

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<tr>
<th>Week</th>
<th>Day</th>
<th>Date</th>
<th>Chapter/Event</th>
<th>Topic/Event</th>
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<tr>
<td>1</td>
<td>Tuesday</td>
<td>8-Jan</td>
<td>Intro</td>
<td>Syllabus/Math Review</td>
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<td>Thursday</td>
<td>10-Jan</td>
<td>1</td>
<td>Essential Ideas in Chemistry</td>
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<tr>
<td>2</td>
<td>Tuesday</td>
<td>15-Jan</td>
<td>1</td>
<td>Essential Ideas in Chemistry</td>
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<td></td>
<td>Thursday</td>
<td>17-Jan</td>
<td>2</td>
<td>Atoms, Molecules and Ions</td>
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<tr>
<td>3</td>
<td>Tuesday</td>
<td>22-Jan</td>
<td>2</td>
<td>Atoms, Molecules and Ions</td>
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<td>Thursday</td>
<td>24-Jan</td>
<td>3</td>
<td>Composition of Substances and Solutions</td>
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<tr>
<td>4</td>
<td>Tuesday</td>
<td>29-Jan</td>
<td>3</td>
<td>Composition of Substances and Solutions</td>
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<td></td>
<td>Thursday</td>
<td>31-Jan</td>
<td>Review</td>
<td>Lecture</td>
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<td>5</td>
<td>Tuesday</td>
<td>5-Feb</td>
<td>Exam 1</td>
<td>Good luck!</td>
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<td></td>
<td>Thursday</td>
<td>7-Feb</td>
<td>4</td>
<td>Stoichiometry of Chemical Reactions</td>
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<tr>
<td>6</td>
<td>Tuesday</td>
<td>12-Feb</td>
<td>4</td>
<td>Stoichiometry of Chemical Reactions</td>
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<td>Thursday</td>
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<td>4</td>
<td>Stoichiometry of Chemical Reactions</td>
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<tr>
<td>7</td>
<td>Tuesday</td>
<td>19-Feb</td>
<td>4</td>
<td>Stoichiometry of Chemical Reactions/Review</td>
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<td></td>
<td>Thursday</td>
<td>21-Feb</td>
<td>Exam 2</td>
<td>Good luck!</td>
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<td>8</td>
<td>Tuesday</td>
<td>26-Feb</td>
<td>9</td>
<td>Gases</td>
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<td>Thursday</td>
<td>28-Feb</td>
<td>9</td>
<td>Gases</td>
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<td>9</td>
<td>Tuesday</td>
<td>5-Mar</td>
<td>5</td>
<td>Thermochemistry</td>
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<td>Thursday</td>
<td>7-Mar</td>
<td>5</td>
<td>Thermochemistry</td>
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<td>10</td>
<td>Tuesday</td>
<td>12-Mar</td>
<td>Review</td>
<td>Lecture</td>
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<td>Thursday</td>
<td>14-Mar</td>
<td>Exam 3</td>
<td>Good luck!</td>
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<td>11</td>
<td>Tuesday</td>
<td>19-Mar</td>
<td>No Class</td>
<td>Spring Break</td>
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<td></td>
<td>Thursday</td>
<td>21-Mar</td>
<td>No Class</td>
<td>Spring Break</td>
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<tr>
<td>12</td>
<td>Monday</td>
<td>25-Mar</td>
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<td>Last day to withdraw with a W grade</td>
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Tuesday 26-Mar 6 Electronic Structure and Periodic Properties of Elements
13 Tuesday 2-Apr 6 Electronic Structure and Periodic Properties of Elements
Thursday 4-Apr 6 Electronic Structure and Periodic Properties of Elements
14 Tuesday 9-Apr 6 Electronic Structure and Periodic Properties of Elements
Thursday 11-Apr Review Lecture
15 Tuesday 16-Apr Exam 4 Good luck!
Thursday 18-Apr 7 Chemical Bonding and Molecular Geometry
16 Tuesday 23-Apr 7 Chemical Bonding and Molecular Geometry
Thursday 25-Apr 7 Chemical Bonding and Molecular Geometry
17 Tuesday 30-Apr 8 Advanced Theories of Covalent Bonding
Thursday 2-May 8 Advanced Theories of Covalent Bonding
Friday 3-May Possible Optional Review Session
18 Tuesday 7-May 10:00 am-12:00 pm Cumulative Final Exam - Good luck!

Class policies:

a. Math skills and basic concepts
This course relies heavily on math including algebra, logarithms, graphing. We will do a brief review during the first week of class but 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 reviewed only briefly in class and will be the basis for more advanced problem solving.

b. Attendance, worksheets, and quizzes
We will meet twice a week – you are expected to attend every class. Short quizzes (closed book) will be given regularly at the beginning of almost every class – do not be late for class – there will be no make up for missed quizzes. Printed worksheets will be handed out frequently to provide additional problem practice. Completed worksheets must be submitted at the beginning of the next class to earn points. The worksheets will not be graded but answer sheets will be provided to verify your work. If you are unable to attend class, you should contact the instructor in advance to give notification of the absence and make necessary arrangements to make up work.

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. CHEM101, Homework & Assignments
The assignments will be available on the CHEM101 website. The deadline is set on the projected date that the material will be completed in class, work will be due by the beginning of the following class. Once the date is passed, you will be able to work on the problems but will not earn credit.

Written homework will be assigned for each chapter. Homework will have to be done on paper and submitted to your instructor on the due date; 10% per day late will be deducted (max 50% penalty).

Some Group Work assignments will be given and the purpose 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 sharing the final answer.
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 valid 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, and participating to outreach chemistry projects will earn extra credit (up to 10). Opportunities will be announced in class and on the Laulima Class Homepage. Attending Supplemental Instruction or tutoring sessions will earn you 4 points per session (up to 20), simply ask you tutor to send me an email with your name, along with date and time of tutoring session.

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 online. The homepage of your Laulima website will be updated each weekend and will provide information regarding upcoming quizzes and exams. You are responsible for viewing the page weekly.

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.

Academic Integrity
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 ‘Akoakoa 213 for more information.

**TITLE IX**

Title IX prohibits discrimination on the basis of sex in education programs and activities that receive federal financial assistance. Specifically, Title IX prohibits sex discrimination; sexual harassment and gender-based harassment, including harassment based on actual or perceived sex, gender, sexual orientation, gender identity, or gender expression; sexual assault; sexual exploitation; domestic violence; dating violence; and stalking. For more information regarding your rights under Title IX, please visit: [https://windward.hawaii.edu/Title_IX/](https://windward.hawaii.edu/Title_IX/).

Windward Community College is committed to the pursuit of equal education. If you or someone you know has experienced sex discrimination or gender-based violence, WCC has resources to support you. To speak with someone confidentially, contact the Mental Health & Wellness Office at 808-235-7393 or Kaahu Alo, Designated Confidential Advocate for Students, at 808-235-7354 or kaahualo@hawaii.edu. To make a formal report, contact the Title IX Coordinator, Karla K. Silva-Park, at 808-235-7468 or karlas@hawaii.edu.

**ALTERNATE CONTACT INFORMATION**

If you are unable to contact the instructor, have questions that your instructor cannot answer, or for any other issues, please contact the Academic Affairs Office:

Location: Alakai 121
Phone: 808-235-7422
Email: wccaa@hawaii.edu