BIOC 141, FUNDAMENTALS OF BIOCHEMISTRY  
3 Credits (CRN 61031)  
Asynchronous Online

INSTRUCTOR:  Dr. Leticia ‘Letty’ Colmenares  
OFFICE:  https://zoom.us/my/colmenares  
OFFICE HOURS:  Thursday 10-11 am and by appointment  
EMAIL:  leticia@hawaii.edu  
EFFECTIVE DATE:  Spring, 2022 (Jan 10-May 13, 2022)

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 the Ko‘olau region of O‘ahu and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.

CATALOG DESCRIPTION

Biological chemistry focusing on the integration of concepts from general, inorganic, and biochemistry and their application to living systems. Satisfies the one-semester chemistry requirement for pre-nursing and pre-dental hygiene majors.

Prerequisites: “C” or better in MATH 25, 26, 28, 29, 75X or higher.

DISCIPLINE: Biochemistry.  CREDITS: 3

DESIGNATION: DP

STUDENT LEARNING OUTCOMES

As a result of taking this course, students can expect to attain the following outcomes:

1. Utilize precise chemical language to effectively communicate biochemical and allied health-related concepts and results.
2. Analyze and apply appropriate procedures for solving biochemical and allied health-related calculations involving solids, liquids, gases, and solutions.
3. Relate the location of an element in the periodic table to its electronic structure and chemical reactivity.
4. Describe ionic and covalent bonding theories and apply them to the construction of proper Lewis structures and prediction of molecular characteristics.
5. Relate biochemical and allied health-related concepts, theories and laws to everyday phenomena.
COURSE WEBSITE

Our class will be using Canvas (not Laulima). Please register in our course website as soon as possible. Locate the Course Invitation that was sent to your hawaii.edu e-mail address before the first day of class. If you cannot find the e-mail, check your SPAM folder.

Open your email invitation, click the “Get Started” link and then create a Canvas Account. Create and memorize your Password. Set your time zone to “Hawaii time”. Click “Register”. The next time you wish to login, go to https://canvas.instructure.com and use your username and password. Please check the FAQs and email your instructor if you have any issues.

COURSE TASKS AND ACTIVITIES

On average, you must spend at least 8 hours per week studying for this course. You must complete and submit each of the coursework (Quizzes, Discussion, Essay or Exam) by the deadlines stated in the Course Schedule found on page 7 of this syllabus.

- Study all course materials found in Modules arranged by week
- Answer all Exercises and Review Questions in the textbook (in Canvas Modules)
- Complete online quizzes almost every week (detailed schedule on page 7)
- Upload your post in Discussion due January 16, January 30, March 6, and April 17
- Complete 3 online Exams due on February 13, March 27, and May 8
- Write and submit a Research Essay paper by May 1
- Optional Final Exam due on May 12

GRADING POLICY

Your final grade will be the weighted average of the following categories:

- Online Quizzes .........................25%
- Online Exams (20% per exam) ........60%
- Research Essay .......................10%
- Discussion Forum..................... 5%
- Optional Final Exam (cumulative) to replace lowest Exam
- TOTAL......................................100%

Course grades will be assigned as follows:

- A = 90-100% of cumulative total
- B = 80-89% of cumulative total
- C = 70-79% of cumulative total
- D = 60-69% of cumulative total
- F = below 60% of cumulative total

Note: curving of grades may be employed if deemed necessary by the instructor.

If you drop out from the course without any notice, you will be assigned an ‘F’ grade. To avoid this, you must withdraw officially (through MyUH) by March 28, 2022. The deadline to change from A-F to CR/NC/audit option (with Office of Admissions & Records) is also on March 28, 2022.
EXTRA CREDIT POLICY

You can earn extra credit up to a **maximum of 20 points (equivalent to 2%** to be added on top of your overall grade).

- Your first Zoom session with the instructor is 2 points. You must write your name in the Chat Box in Zoom to get credit. Succeeding sessions will NOT earn ANY points.
- Tutoring at Tutor.com or TRIO Center is 2 points extra credit per 1-hr session. Please upload proof (copy of your session transcript) in Discussion by the **end of the semester**.
- Use Tutor.com and/or the Writing Center to get feedback and grammar check of your essay. Each will earn 2 points. Proof is required.

LEARNING RESOURCES

1. All course materials are found in the course website (**Modules**). The Fundamentals of Biochemistry ( Chemistry LibreText) is under a Creative Commons by-nc-sa 3.0 license. $0 cost.
2. Course website.  [https://canvas.instructure.com](https://canvas.instructure.com)
3. Purchase your own scientific calculator with exponential and logarithm functions.
4. Required: Most recent **Periodic Table of Elements** (download from Canvas).
5. Tutor.com (Online tutoring). The University of Hawaii Community Colleges offers free online, on-demand tutoring, through Tutor.com available 24/7. Sign in to [https://myuh.hawaii.edu](https://myuh.hawaii.edu) for access to Tutor.com. On the "Connect with a tutor" page, select your discipline, course/subject, and fill out the question or concept you want help within your tutoring session. For more information, see [https://windward.hawaii.edu/tutor.com/](https://windward.hawaii.edu/tutor.com/)
6. TRIO Student Support Services. TRIO provides offers free individual and small group tutoring for many WCC courses.  [https://windward.hawaii.edu/services-for-students/tutoring/trio-sss/](https://windward.hawaii.edu/services-for-students/tutoring/trio-sss/)
7. Writing Center. The Writing Center is available for online drop-in tutoring. Tutors will work with students on a first-come first-served basis. [https://windward.hawaii.edu/services-for-students/tutoring/ka-piko/writing-lab/](https://windward.hawaii.edu/services-for-students/tutoring/ka-piko/writing-lab/)

HOW TO STUDY for this CLASS

1. This course requires self-motivation, discipline, and initiative on your part and the ability to adhere to a strict deadline. This class is **NOT** self-paced. You are expected to MEET ALL DEADLINES in the Course Schedule (see page 7).

As your instructor, I will be your guide and mentor. I’m available via Zoom at **10-11 am Thursdays** except holidays and by appointment between the hours of 1-4 pm, **Monday thru Thursday**. Please use the **Inbox tool** in Canvas to email/make an appointment for Zoom consultation. Please ALLOW 24 HOURS for responses to emails.

2. You are expected to **login the course website** at least every other day. The website is your classroom and not coming to the site is like skipping class. You are expected to spend at least **8 hours per week** for this course. Please schedule real-time hours that you will routinely follow. An example: **MWFS 7-9 pm** (8 hrs total). Tips on how to manage your time is found at: [https://www.purdueglobal.edu/blog/student-life/time-management-busy-college-students/](https://www.purdueglobal.edu/blog/student-life/time-management-busy-college-students/)
3. Complete the syllabus quiz (14 questions, mandatory) as soon as possible. It is very important that you read the course syllabus, FAQ’s and welcome video ASAP. Please familiarize yourself with the course tasks, resources, grading and learn how to navigate the course website before taking the syllabus quiz.

4. The course content and assigned tasks are all delivered thru the Modules. It is arranged chronologically by date. Read ALL the text materials and watch ALL the lecture videos for each chapter asking yourself, "what is the major point of this chapter?" Examine the illustrations, tables, and examples. Have a notebook and take good notes.

5. Focus on the section objectives/skills found in each chapter of the textbook. IMPORTANT: You are expected to answer ALL the Exercises and Review Questions in each section. Use the answer key to check if your answers are correct. If wrong, please re-read the topic.

6. Chapter quizzes. After studying the chapter, please take the chapter quiz. The quiz is made up of 25 questions randomly selected from a test bank. The time limit is 65 min. The quiz will automatically close when the time limit is reached. If you step away while taking the quiz, you will be timed out and cannot resume the quiz.

   - Always use Google Chrome browser for all quizzes and exams.
   - Always have a calculator and a periodic chart ready before you begin the quiz. After taking the quiz, check your score in the gradebook and click ‘Review’.
   - You are allowed two attempts before the due date or until the grace period expires. The higher of the 2 scores is recorded in the Gradebook.
   - Review each quiz and identify the questions/topics you do not understand.
   - Meet with the instructor to discuss your mistake/s. Alternatively, go to a tutor at Tutor.com or TRIO. Students should use tutoring from the very beginning of the semester before running into any difficulties.

7. Discussion Posts. Your discussion post must be uploaded at least one week before the due date to allow edits/revisions. Follow the instructions thoroughly and provide student interactions when required. Always be respectful to everyone and follow netiquette rules: http://www.albion.com/netiquette/corerules.html

   - Discussion #1- Introduce yourself (due January 16)
   - Discussion #2- Question-and-Answer before Exam 1 (due January 30)
   - Discussion #3- Question-and-Answer before Exam 2 (due March 6)
   - Discussion #4- Question-and Answer before Exam 3 (due April 17)

8. Midterm Exams (50 questions). Exam 1 covers chapters 1-3, Exam 2 covers chapters 4-7, and Exam 3 covers chapters 8-11. The Final Exam is cumulative covering ALL topics. Each of these will be non-proctored. The exams will be made available online for 3 days.

   The exams will be closed notes and closed books. To prevent cheating (see “Academic Integrity”), the exam will be conducted within a limited time of 65 minutes. IMPORTANT: It will automatically close after 65 minutes. Any request for special accommodation or extended time should be made 2 weeks before the exam and shall be allowed only if proctored by the Testing Center.

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A **practice exam** (in a form of a quiz) is provided for each exam to help you prepare. Book an appointment with instructor/tutor ahead of time to help review your individual problem areas.

**RESEARCH ESSAY**

The research paper must make a connection between a chemistry concept learned in class and a problem in real life. This will be written based on textbook readings and online resources. The research paper must be two pages (double space) long with at least 500 words. You must choose **one topic** that is the most interesting to you from a **list provided by the instructor**. The link to the list of topics and **ALL** the pertinent information is found in **Modules (April 18-May 1)**. You **MUST** read this page and all the links before starting to write.

**LATE POLICY**

In case of an emergency or illness, you are allowed to submit late **quizzes and discussion** (only) up to the **end of the grace period** (or **Available until date**). After the end of the grace period, a score of zero will be recorded. It is the student’s responsibility to check the end of the grace period.

**MAKE-UP POLICY**

To avoid accidentally opening a quiz or exam, please **READ** testing instructions very carefully. There will be **no make-up exams**. Re-testing is not allowed.

**MySUCCESS PROGRAM**

At WCC we want every student to be successful. The MySuccess Program is a campus-wide program that seeks to support students early in the semester when they first begin having trouble in a class. If I feel that you are having difficulty in my class within the first few weeks of the semester (e.g., missing assignments, or low scores) I may refer you to the program. I will notify you about my intention to refer you to the program. Once referred, the MySuccess Program will:

- Send an email to your hawaii.edu account to let you know about my referral; and
- Have a counselor follow up with you by phone or by email to find out what kind of help you might need, to connect you with the necessary resources, and to help you devise a strategy for success.

**DISABILITIES ACCOMMODATIONS**

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 Accessibility Counselor to discuss reasonable accommodations that will help you succeed in this class. Roy Inouye can be reached at (808) 235-7448, royinouy@hawaii.edu, or you may stop by Hale Kāko’o 106 for more information.

**SEX DISCRIMINATION AND GENDER-BASED VIOLENCE RESOURCES (TITLE IX)**

Windward Community College is committed to providing a learning, working, and living environment that promotes personal integrity, civility, and mutual respect and is free of all forms of sex discrimination and gender-based violence, including sexual assault, sexual harassment, gender-based harassment, domestic violence, dating violence, and stalking.
If you or someone you know is experiencing any of these, WCC has staff and resources to support and assist you. To report an incident of sex discrimination or gender-based violence, as well as receive information and support, please contact one of the following:

Madoka (Doka) Kumagai, Confidential Advocate
Phone: (808) 348-0663 (cellular)  Phone: (808) 956-6084 (office)
Email: kumagaim@hawaii.edu

Desrae Kahale, Mental Health Counselor & Confidential Resource
Phone: (808) 235-7393.  Email: dkahale3@hawaii.edu
Office: Hale Kāko’o 101

Karla K. Silva-Park, Title IX Coordinator
Phone: (808) 235-7468  Email: karlas@hawaii.edu
Office: Hale ʻĀkoakoa 220

As a member of the University faculty, I am required to immediately report any incident of sex discrimination or gender-based violence to the campus Title IX Coordinator. Although the Title IX Coordinator and I cannot guarantee confidentiality, you will still have options about how your case will be handled. My goal is to make sure you are aware of the range of options available to you and have access to the resources and support you need.

For more information regarding sex discrimination and gender-based violence, the University’s Title IX resources and the University’s Policy, Interim EP 1.204, go to manoa.hawaii.edu/titleix/

ACADEMIC INTEGRITY

Work (quizzes, exams, discussion posts and essay) submitted by a student must be the student’s own work. While taking exams, you are NOT allowed to open other websites/notes or google what is the answer. You are not allowed to take photos of the questions. You must not obtain nor share with anybody what is in the test.

In your essay, the work of others should be explicitly marked, such as through use of quotes or citations (references cited). Trying to present another person’s work as your own is plagiarism. Plagiarism includes copying in whole or part from another individual’s work without identifying the individual; submitting the same essay in more than one course without obtaining authorization from the instructors involved; and fabricating information.

In this class, all parties involved in academic dishonesty, cheating or plagiarism will receive a score of zero for the plagiarized assignment or exam. Students will receive a failing grade in the course after a second offense. All cases of academic dishonesty are referred to the Vice Chancellor for Student Affairs.

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: Alakaʻi 121
- Phone: (808) 235-7422
<table>
<thead>
<tr>
<th>Dates</th>
<th>Topic</th>
<th>Due Dates 11:59 PM</th>
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</thead>
<tbody>
<tr>
<td>Jan 10</td>
<td>Print a copy of the Course Syllabus, FAQ’s. Purchase a scientific calculator. Go Tutor.com.</td>
<td></td>
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<tr>
<td>Jan 10-16</td>
<td>Chapter 1: Chemistry, Matter, Classification and Changes of Matter, Measurement, Scientific Method, Scientific Notations, Significant Figures, System International, Dimensional Analysis, Conversions, Dosage Calculations</td>
<td>Syllabus Quiz due Jan 16 Discussion #1 due Jan 16 Quiz #1 due Jan 16</td>
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<tr>
<td>Jan 17-23</td>
<td>Chapter 2: Elements and Atoms, Atomic Theory, Atomic Structure, Atomic Mass, Isotopes, Periodic Table.</td>
<td>Quiz #2 due Jan 23</td>
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<td>Jan 24-30</td>
<td>Chapter 3: Ionic Bonding and Ionic Compounds, Chemical Formulas, Nomenclature, Formula Mass, Properties of Ionic Compounds.</td>
<td>Quiz #3 due Jan 30 Discussion #2 due Jan 30</td>
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<td>Jan 31-Feb 6</td>
<td>Chapter 4. Covalent Bonding and Simple Covalent compounds, Chemical Formulas, Nomenclature, Characteristics of covalent molecules, Organic Chemistry.</td>
<td>Quiz #4 due Feb 6</td>
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<td>Feb 7-13</td>
<td>EXAM 1 (Chapters 1-3 only)</td>
<td>EXAM 1 ends on Feb 13</td>
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<td>Feb 28-Mar 6</td>
<td>Chapter 7. Energy Changes. Temperature, energy, phase changes. Bond energies, energy of reactions.</td>
<td>Quiz #7 due Mar 6 Discussion #3 due Mar 6</td>
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<td>Mar 7-13</td>
<td>Chapter 8. Intermolecular interactions, solids, liquids and gases. Gas laws.</td>
<td>Quiz #8 due Mar 13</td>
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<td>Mar 14-20</td>
<td>SPRING RECESS</td>
<td>RELAX</td>
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<tr>
<td>Mar 21-27</td>
<td>EXAM 2 (Chapters 4-7 only)</td>
<td>EXAM 2 ends on Mar 27</td>
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<tr>
<td>Apr 4-10</td>
<td>Chapter 10. Acids &amp; Bases, Definitions. Strengths of acids and bases, Buffers.</td>
<td>Quiz #10 due Apr 10</td>
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<td>Apr 11-17</td>
<td>Chapter 11. Radioactivity. Alpha, beta, and gamma decay. Half-life. Uses of radioactivity.</td>
<td>Quiz #11 due Apr 17 Discussion #4 due Apr 17</td>
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<tr>
<td>Apr 18-May 1</td>
<td>Write an essay following course rubrics.</td>
<td>Essay due May 1</td>
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<td>May 2-8</td>
<td>EXAM 3 (Chapters 8-11)</td>
<td>EXAM 3 ends on May 8</td>
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<td>May 10-12</td>
<td>Final Exam (cumulative, Chapters 1-11)</td>
<td>Final EXAM ends on May 12</td>
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