(Virtual via Moodle) Fall 2021 College Chemistry I (CH 121)

CRN: 20362 Live Sessions** on Wednesday 11:00 – 12:50 AM via Zoom

Online Lectures: Follow class schedule strictly to complete each task
Online Live Sessions: Wednesday of week 1, 2, 4, 6, 8, 10
Online Chapter Exams: Friday of week 2, 4, 6, 8
Online Final Exam: Monday of week 11

Instructor: Dr. Ommidala Pattawong (pattawo@linnbenton.edu)
Office Hour: By appointment via https://koalendar.com/e/meet-with-ommidala-pattawong

Course Information:

This course is the first of a three-term college chemistry sequence for students in human performance, certain health occupations programs, agriculture, animal science, and fisheries and wildlife, who have had no previous training in chemistry and whose program of study requires only a one-year sequence of college chemistry. Topics include atomic theories, electron configurations, periodic properties, bond formations, nomenclature, chemical bonding, chemical equations, and chemical quantities. Entering students are expected to have a working knowledge of high school algebra and scientific notation. (Note - this sequence is not equivalent to General Chemistry. CH 121 does not fulfill the Baccalaureate Core requirements at OSU, however the next two courses in the series, CH 122 and CH 123, fulfill Baccalaureate Core requirements at OSU.) CH 121, CH 122, and CH 123 must be taken in order.

Online Class and Equipment Requirements

Our class this term is an online class with a live session on most Wednesday (see course schedule, page 6). The online video lessons are posted on Moodle**.** Students need to manage time to complete watching lecture videos and completing problem sets within the timeline that is set on our course schedule prior to the live session on Wednesday in order to be on track (see the last page of this syllabus).

LBCC is encouraging students to obtain the equipment you will need in order to be successful in online classes. Please see the list of equipment below. Students who cannot afford these resources can contact the Roadrunner Resource Center about funding.

- A computer
- A stable internet connection
- A speaker
- A web camera
- A microphone
- A scanner or a device that can take picture

Online Participation and Online Workload Expectation:

Even though our course is online and everything is provided for you, this doesn't mean that you can just watch videos and think you can pass the class. You are still expected to participate in the course by reading textbook, practicing problems, jotting down notes, and completing homework. The amount of work for online course will still be the same as in person class for a 5-credit course. Students will need to manage and schedule your time for chemistry accordingly. In our regular class, students spend 5 hours face-to-face lecture per week and the average work outside chemistry classroom is about 7 - 11 hours per week depending on how well you understand the materials**. However, the college recommends students to spend 3 hours outside of class for every 1 credit to study; this would come out to be 15 hours per a 5-credit course.**

If you add those hours together, you will see that students are expected to spend about 12 - 16 hours a week depending on each one's learning skills to watch lecture videos, do D.I.Y problems, and complete Knewton HW. But per college recommendation for a 5-credit course, it would be 20 (5 + 15) hours per week for both inside and outside of class work. **My recommendation for students is to block out at least 3 - 4 hours a day to complete the class assignments. You will end up spending time for the online course about the same as a regular in-person course, and you will not feel overwhelmed.**

Student Learning Outcomes:

1. Differentiate the historical developments leading to the development of atomic theory and the Periodic Table.
2. Solve scientific problems with quantitative methods using dimensional analysis and/or algebra regarding unit conversions, properties of light, energy of photon, transition energy, and stoichiometry.
3. Apply chemical principles associated with chemical and physical changes and properties of matter, quantum theory, electron configurations, periodic properties, bond formations, nomenclature, chemical bonding, and chemical reactions.

Minimum Requirements:

MTH 095 Intermediate Algebra with a grade of 'C' or better

Required Course Materials (Available for you to purchase at the bookstore):

1. Chemistry 121 Lecture Manual
2. Scientific Calculator
3. Knewton Alta Access Code for online homework – see pg. 4 for instructions to set-up/purchase Alta access
4. CH 121 - OER textbook (free for online access via Moodle).

   If you wish to purchase a low-cost print copy of the textbook, please order it to print on demand by emailing orders@linnbenton.edu. The campus store will give you the price quote for the print copy of OER textbook.)

Grade Assessments:

Your grade will be assigned based on your performance in the following areas:

Course Overview Quiz	10 pt.	=	10 pt.	(2%)
Online Exams	5 x 70 pt.	=	350 pt.	(78%)
Best 6 HWs	6 x 15 pt.	=	90 pt.	(20%)
Total			450 pt.	(100%)

Course Grade:

Assignment of course grades will follow an approximate breakdown of

- A = 90-100% Excellent Work
- B = 80-89% Good Work
- C = 70-79% Average Work
- D = 60-69% Poor Work
- F = 0-59% Failing Work

An incomplete grade (I) may be given at the discretion of the instructor. However, a student must have a passing grade at the time an incomplete is assigned. **Your grade in the course is assigned based on your performance on the exams, homework, labs, etc.; your letter grade will NOT be assigned based on the instructor's subjective opinion of your effort in the course.**

Exam Policies and Expectations:

Five exams throughout the term will be used to evaluate your understanding of the materials. The exams must be taken on the scheduled date (see course schedule, page 6) unless prior arrangement is made. **Failing to take the exam on the scheduled date will result in a score of zero.**

The exams will be available for students on Moodle on Friday of week 2, 4, 6, 8 and Monday of week 11 from 9 AM – 5 PM. The exams will be designed for students to complete within 1 hour.

You will be required to scan or take pictures of your work for calculation problems and email me within 20 minutes after you submit the exam in order to receive full credit.

****NOTE:** The exams are designed for everyone who studies and keeps up with the lecture materials to be able to complete the exams within 1 hour. If you are struggling to complete the exams, it indicates that you are not prepared and have not mastered the essential chemistry skills yet. If this happens to you, please reach out to me as soon as possible, so that we can discuss study strategies and exam taking strategies for the future exams.

Any academic dishonesty during any exams including cheating, using websites, and obtaining help from other people that are not permitted, will result in a score of ZERO for the exam!

Live Sessions:

Live sessions are on Wednesday of week 1, 2, 4, 6, 8, and 10 from 11:00 AM – 12:50 PM via Zoom.

Students can access live sessions from Moodle by clicking on the Zoom link. These live sessions are designed to help you reviewing materials before the exam, address any concerns, and connect you with your instructor and your peers. My hope is that even though this is an online course, my students will still feel confident and prepared entering into the exam and feel connected with instructor and others in the course.

Online Homework:

To succeed in chemistry, like learning a foreign language, you should study and practice every day. As material is covered you will find the problems are easier to work and not as time consuming as if they are attempted just before the due date. You can access Knewton Alta Online Homework via Moodle site. Each chapter homework is worth 15 points. Homework is due by 11:59 pm on the dates listed on the schedule (page 6). Your six highest scores will be used to determine your total homework score. **If you complete all of the online homework assignments, the points from your lowest homework will be used as extra credit.**

NOTE: This homework is adaptive to each learner. If you don't get consecutive correct answers, the system will think that you have not mastered in a particular topic; therefore, it will throw more problems at you. If this happens, please get help from your instructor to avoid frustration.

***For late online homework**, students can turn in completed assignments after the due date up to 7 days late. However, students will receive a deducted **5% penalty** from the completed scored per day late.*
***For late paper homework,** students will receive a score of zero once the solution is released.*

Instructions to Sign Up for Knewton:

1. Log into Moodle and navigate to the CH 121 course.
2. Click on any homework assignment to launch Knewton.
3. Click **Purchase** and then choose **One-Time Purchase** or **Redeem Access Code**. The access codes are available at the bookstore. There is also an option to get courtesy access for 14-days.

If you have technical issues, you can use the feedback button, the online chat, or email support@knewton.com. **The Knewton support team is almost always faster and better able to resolve issues than your instructor.**

Extra Credit:

1. *Homework Completion:* If you complete all of the online homework assignments, the points from your lowest homework will be used as extra credit. Thus, you can earn up to 15 points.
2. *Extra Credit on Exams:* There will be 5 points extra credit embedded in every exam. Thus, the total of 5 exams x 5 points = 25 points can be earned.
3. *Optional Course Feedback: This course feedback will be sent out by me on week 9 (NOT the survey sent by LBCC).* This anonymous survey is worth 5 points.

Roadrunner Resource Center for Basic Needs:

Any student who has difficulty affording tuition, course materials, hygiene materials, food, who lacks a safe and stable place to live, who needs transportation, and believes this may affect their performance in the course, is urged to contact the Roadrunner Resource Center for support (Resources@linnbenton.edu).

Center for Accessibility Resources:

LBCC is committed to inclusiveness and equal access to higher education. If you have approved accommodations through the Center for Accessibility Resources (CFAR) and would like to use your accommodations in the class, please talk to your instructor as soon as possible to discuss your needs. If you believe you may need accommodations but are not yet registered with CFAR, please visit the CFAR Website for steps on how to apply for services or call (541) 917-4789.

Drop/Withdraw Policy:

If you are withdrawing from the class you must file a Schedule Change Form with Registration or use WebRunner. If you formally drop the class by Monday of the second week of the term, you will receive a tuition refund. If you withdraw after the Monday of the second week of instruction through the seventh week a 'W' will show up on your transcript. No withdrawals are allowed after the end of the seventh week. An instructor may not assign a "W" grade. If you received financial aid or veteran's benefits PLEASE talk with associates at the appropriate office to determine what effects on eligibility dropping a course will have. Don't jeopardize your eligibility!! You can contact the Financial Aid Office by calling (541) 917-4850. If you stop attending the course without formally withdrawing you will continue to accumulate grades (zeroes for all assignments not turned in) and will receive the grade assigned by the instructor. You will also be held accountable for all charges on your account.

Academic Integrity:

"An instructor has the right to issue a grade of F for the course in which the instructor has reason to believe the student has cheated. A student has the right to appeal such action in accordance with the Students' Rights, Responsibilities and Conduct Policy." The preceding statement is Administrative Rule No. 7030-02.

LBCC Comprehensive Statement of Nondiscrimination:

LBCC prohibits unlawful discrimination based on race, color, religion, ethnicity, use of native language, national origin, sex, sexual orientation, gender, gender identity, marital status, disability, veteran status, age, or any other status protected under applicable federal, state, or local laws. For further information see Board Policy P1015 in our Board Policies and Administrative Rules.

Changes to the Syllabus:

I reserve the right to change the contents of this syllabus due to unforeseen circumstances. You will be given notice of relevant changes in class, through a Moodle Announcement, or through LBCC e-mail.

Course Content

Chapter 1 – Essential Ideas in Chemistry
1.1 Chemistry in Context
1.2 Phases and Classification of Matter
1.3 Properties and Changes
1.4 Measurements: Numbers, Units, and Uncertainty
1.5 Dimensional Analysis

Chapter 2 – Atomic Structure
2.1 Modern Atomic Theories and The Discovery of Subatomic Particles
2.2 Atomic Structure and Atomic Mass

Chapter 3 – Development of Electronic Structure of Atoms
3.1 Light as Wave – Electromagnetic Spectrum
3.2 Light as Particle – Quantized Energy and Photon
3.3 The Bohr Model
3.4 Development of Quantum Theory
3.5 Quantum Numbers and Shapes of Orbitals

Chapter 4 – Electron Configurations and Periodic Properties of Elements
4.1 How Electrons Occupy Orbitals
4.2 Electron Configurations of Atoms
4.3 The Periodic Table
4.4 The Periodic Trends

Chapter 5 – Bond Formations and Nomenclature
5.1 Types of Chemical Bonds
5.2 Determination of Chemical Composition
5.3 Determination of Chemical Formulas
5.4 Formula Mass, Molecular Mass, and Molar Mass
5.5 Ionic Compounds – Formulas and Names
5.6 Molecular Compounds – Formulas and Names

Chapter 6 – Chemical Bonding
6.1 Lewis Model
6.2 Valence Shell Electron Pair Repulsion Theory (VSEPR)
6.3 Valence Bond Theory (VBT)
6.4 Molecular Orbital Theory (MOT)

Chapter 7 – Chemical Equations and Chemical Quantities
7.1 Writing and Balancing Chemical Equations
7.2 Reaction Stoichiometry
7.3 Limiting Reactant, Theoretical Yield, and Percent Yield

CH 121 Virtual Course Schedule – Fall 2021

**Note: I reserve the right to change the schedule due to unforeseen circumstances. You will be given notice of relevant changes in class, through a Moodle Announcement, or through LBCC e-mail.

Please use the course schedule as a guideline to complete each task.

All homework assignments are due by 11:59 pm on the date indicated on the schedule.

Week No.	Mon.	Tues.	Wed.	Thurs	Fri.
1 (9/27-10/1)	1.1 – 1.3	1.4	Live Session	1.4 – 1.5	1.5
2 (10/4-10/8)	2.1 – 2.2 ***Ch1 HW due***	2.2	Live Session	2.2	***Exam Chapter 1***
3 (10/11-10/15)	3.1 ***Ch2 HW due***	3.2	3.3	3.3 – 3.4	3.4 – 3.5
4 (10/18-10/22)	4.1 ***Ch3 HW due***	4.2	Live Session	4.3 – 4.4	***Exam Chapter 2&3***
5 (10/25-10/29)	4.4 ***Ch4 HW due***	5.1	5.1	5.2 – 5.3	5.4
6 (11/1-11/5)	5.5 ***Ch5/1 HW due***	5.5 – 5.6	Live Session	5.6	***Exam Chapter 4***
7 (11/8-11/12)	6.1 ***Ch5/2 HW due***	6.1	6.1	*Holiday*	6.2
8 (11/15-11/19)	6.2 ***Ch6/1 HW due***	6.2	Live Session	6.3	***Exam Chapter 5***
9 (11/22-11/26)	6.3 ***Ch6/2 HW due***	6.4	7.1	*Holiday*	*Holiday*
10 (11/29-12/3)	7.2 ***Ch6/3 HW due***	7.3	Live Session	*Study Day* ***Ch7 HW due***	*Study Day*
11 (12/6-12/8) *Final Week*	***Exam Chapter 6&7***				