(Online via Moodle)
Chemistry for Health Occupations:
Introduction to General Chemistry

CH 112 – Fall 2020

CRN: 23764

Online Exams: Friday of week 3, 6, 8, and 10 from 1 – 2:50 PM
Required Group work and Online Labs: Friday of week 1, 2, 4, 5, and 7 from 1 – 2:50 PM

** This course requires students to set time for Friday from 1 – 2:50 PM aside from work and other obligations.

Instructor: Dr. Ommidala Pattawong (pattawo@linnbenton.edu)

Course Information:

Introductory topics in inorganic chemistry selected to prepare students entering Nursing, Emergency Medical Technician, Radiation Technician, and related Health Occupations programs.

Online Class and Equipment Recommendation

Our class this term is an online class. 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 in order to be on track (see the last page of this syllabus). The course schedule is a guideline of a time frame that tells you when you need to complete each task.

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 pictures

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 4 hours face-to-face lecture per week, 2 hours face-to-face lab per week, and the average work outside chemistry classroom is about 5 - 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; this would come out to be 15 hours per a 5-credit course.**

If you add the above hours together, you will see that students are expected to spend about 12 - 18 hours a week depending on each one's learning skills to watch lecture videos, do D.I.Y problems, complete Knewton HW, and complete lab assignments. But per college recommendation for a 5-credit course, it would be 21 (4 + 2 + 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.

Student Learning Outcomes:

1. Solve mathematical problems using dimensional analysis.
2. Categorize and identify the different components of matter.
3. Solve stoichiometry problems using dimensional analysis.
4. Analyze the Periodic Table to explain atomic structure, chemical bonding, nomenclature, and properties of matter.
5. Differentiate between states of matter and solve chemical problems involving the different states of matter.
6. Explain and solve problems involving solution chemistry.
7. Explain and solve problems involving reaction rates, equilibrium, and acids and bases.

Minimum Requirements:

Prerequisite: MTH 095 with a grade of C or better.

Required Course Materials:

- Textbook: THE BASICS OF GENERAL, ORGANIC, AND BIOLOGICAL CHEMISTRY Version 2.0; Ball, Hill, and Scott, FlatWorld, 2018.
- Scientific calculator
- Alta access code (online homework) – see pg. 3 for instructions to set-up/purchase Alta access

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

5 Required Group Work	5 x 15	=	75 pt. (15.5%)
5 Lab Assignments	5 x 15 pt.	=	75 pt. (15.5%)
(Best 9 out of 10) Homework	9 x 10 pt.	=	90 pt. (19%)
4 Exams	4 x 60 pt.	=	240 pt. (50%)
Total		=	**480 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:

Four exams throughout the term will be used to evaluate your understanding of the materials ***(no final exam).*** 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 designed for students to complete within 1 hour and 50 minutes of the designated class period on Friday.

The exams will be available for students on Moodle on Friday of week 3, 6, 8, and 10 from 1 – 2:50 PM

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.
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 and 50 minutes. 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!

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 homework assignment is worth 10 points. Homework is due by 11:59 pm on the dates listed on the schedule (page 6). Your nine 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 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 homework, students can turn in completed assignments after the due date up to 7 days late. However, students will received a deducted **5% penalty** from the completed scored per day late.*

Instructions to Sign Up for Knewton:

1. Log into Moodle and navigate to the CH 112 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 issues with Knewton, 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.**

Required Group Work and Laboratory Exercise:

The required group work starts at 1 PM on some Friday and followed by the online lab. The required group work and online labs are scheduled on Friday of week 1, 2, 4, 5, and 7 from 1 – 2:50 PM.

These group work sessions are mandatory, as its time is on the class schedule of LBCC registration page. Thus, please have a set time as indicated above for the required live zoom session by revising your work schedule and other conflict accordingly.

Students can access required group work sessions via Moodle by clicking on the Zoom link. These group work sessions are designed to connect you with your instructor and your peers. My hope is that even though this is an online course, my students will still feel connected with others in the course. We will use this live session to catch up with each other, address any concerns, and more importantly work on group work with your peers. Each group work is worth 15 points.

The online lab materials will be available on Moodle. Generally, students will read the online instructions (lab manual) for each week. Then, answer the pre-lab questions on Moodle. After you have submitted your pre-lab, lab video will become available for you to watch. After watching the lab video, the experimental data will be

available for you to access and complete the analysis and calculations. **Each part of the post-lab should be written in your own words**. Each lab is worth 15 points.

*For late lab assignments, students can turn in completed lab assignments after the deadline up to 7 days late. However, students will received a deducted **5% penalty** from the completed scored per day late.*

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 or by visiting the Financial Aid Office in Takena Hall.

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.

Center for Accessibility Resources:

You should meet with your instructor during the first week of class if:

1. You have a documented disability and need accommodations.
2. Your instructor needs to know medical information about you.
3. You need special arrangements in the event of an emergency.

If you have documented your disability, remember that you must make your request for accommodations through the Center for Accessibility Resources Online Services web page every term in order to receive accommodations. If you believe you may need accommodations but are not yet registered with CFAR, please visit the CFAR website at www.linnbenton.edu/cfar for steps on how to apply for services or call 541-917-4789.

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

**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.

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

Chapter 1 Elements, Atoms, and the Periodic Table
- 1.1 – The Elements
- 1.2 – Atomic Theory
- 1.3 – The Structure of Atoms
- 1.4 – Nuclei of Atoms
- 1.5 – Atomic Masses
- 1.6 – Arrangments of Electrons
- 1.7 – The Periodic Table

Chapter 2 Ionic Bonding & Simple Ionic Compounds
- 2.1 – Two Types of Bonding
- 2.2 – Ions
- 2.3 – Formulas for Ionic Compounds
- 2.4 – Ionic Nomenclature
- 2.5 – Formula Mass

Chapter 3 Covalent Bonding & Simple Molecular Compounds
- 3.1 – Covalent Bonds
- 3.2 – Covalent Compounds
- 3.3 – Multiple Covalent Bonds
- 3.4 – Characteristics of Covalent Bonds
- 3.5 – Characteristics of Molecules
- 3.6 – Introduction to Organic Chemistry

Chapter 4 Introduction to Chemical Reactions
- 4.1 – The Law of Conservation of Matter
- 4.2 – Chemical Equations
- 4.3 – Quantitative Relationships Based on Chemical Equations
- 4.4 – Some Types of Chemical Reactions
- 4.5 – Oxidation-Reduction (Redox) Reactions
- 4.6 – Redox Reactions in Organic Chemistry and Biochemistry

Chapter 5 Quantities in Chemical Reaction
- 5.1 – The Mole
- 5.2 – Atomic and Molar Masses
- 5.3 – Mole-Mass Conversions
- 5.4 – Mole-Mole Relationships in Chemical Reactions
- 5.5 – Mole-Mass and Mass-Mass Problems

Chapter 6 Energy and Chemical Processes
- 6.1 – Energy and Its Units
- 6.2 – Heat
- 6.3 – Phase Changes
- 6.4 – Bond Energies and Chemical Reactions
- 6.5 – The Energy of Biochemical Reactions

Chapter 7 Solis, Liquids, and Gases
- 7.1 – Intermolecular Interactions
- 7.2 – Solids and Liquids
- 7.3 – Gases and Pressure
- 7.4 – Gas Laws

Chapter 8 Solutions
- 8.1 – Solutions
- 8.2 – Concentrations
- 8.3 – The Dissolution Process
- 8.4 – Properties of Solutions

Chapter 9 Acids and Bases
- 9.1 – Arrhenius Definition
- 9.2 – Brønsted-Lowry Definition
- 9.3 – Water: Both an Acid and a Base
- 9.4 – The Strengths of Acids and Bases
- 9.5 – Buffers

Chapter 10 Nuclear Chemistry
- 10.1 – Radioactivity
- 10.2 – Half-Life
- 10.3 – Units of Radioactivity
- 10.4 – Uses of Radioactive Isotopes
- 10.5 – Nuclear Energy

CH 112 Online Course Schedule – Fall 2020

**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 and lab assignments are due by 11:59 pm on the date indicated on the schedule.

Week No.	Mon.	Tue.	Wed.	Thur.	Fri.
1 (9/28-10/2)	Chapter 1				Required Live Group Work followed by **Lab 1:** Density & Scientific Method
2 (10/5-10/9)	**Lab 1 & HW 1 Due**	Chapter 2			Required Live Group Work followed by **Lab 2:** Chemical Reactions
3 (10/12-10/16)	**Lab 2 & HW 2 Due**	Chapter 3			***Exam Chapter 1 & 2***
4 (10/19-10/23)	**HW 3 Due**	Chapter 4			Required Live Group Work followed by **Lab 3:** Quantities in Rxn
5 (10/26-10/30)	**Lab 3 & HW 4 Due**	Chapter 5			Required Live Group Work followed by **Lab 4:** Energy
6 (11/2-11/6)	**Lab 4 & HW 5 Due**	Chapter 6			***Exam Chapter 3, 4, & 5***
7 (11/9-11/13)	Chapter 7 **HW 6 Due**		Holiday	Chapter 7	Required Live Group Work followed by **Lab 5:** Acids, Bases, and Buffers
8 (11/16-11/20)	**Lab 5 & HW 7 Due**	Chapter 8			***Exam Chapter 6 & 7***
9 (11/23-11/27)	**HW 8 Due**	Chapter 9		Holiday	Holiday
10 (11/30-12/4)	**HW 9 Due**	Chapter 10		Study Day **HW 10 Due**	***Exam Chapter 8, 9, & 10***

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There is no final exam for this course.

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.