Online College Chemistry III (via Moodle)

CH 123 – Spring 2019

CRN: 43435 (Lecture)
CRN: 43650 & 43651 (Laboratory)

Instructor: Ommidala Pattawong, Ph.D.

Office Hours: Thur. 12 – 2 pm via Zoom **Contact:** pattawo@linnbenton.edu

Course Information:

This is the third of a three-term college chemistry sequence for students in, human performance, certain health occupations programs, agriculture, animal science, and fisheries and wildlife. This sequence is for students who have had no previous training in chemistry and whose program of study requires only a one-year sequence of college chemistry. Topics include acid-base equilibrium, buffers, ionic equilibrium, thermodynamics, electrochemistry, and organic chemistry.

Online Class and Participation

Our class this term is an online class. The online video lessons are posted on Moodle**.** The OER textbook for each of lessons also is posted along with the lecture outline (manual).

Students need to manage time to complete watching lecture videos and completing problem sets whatever day and time works best for them. The recommendation is that students should complete each chapter section 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. The lesson modules are flexible. You are welcome to complete all of them ahead of time, all in one day, or spread them out throughout the week. That is up to you. Do whatever works best for you. **However, the deadline for homework, pre-lab, post-lab, and exams are fixed.**

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 OER textbook, practicing problems, jotting down notes, and completing homework.

Student Learning Outcomes:

1. Solve scientific problems with quantitative methods regarding acid-base equilibrium, buffers, ionic equilibrium, thermodynamics, and electrochemistry.
2. Apply chemical principles related to acid-base equilibrium, buffers, ionic equilibrium, thermodynamics, electrochemistry, and organic chemistry.
3. Work safely in a laboratory environment while observing and accurately recording measurements related to chemical phenomena.

Minimum Requirements:

Prerequisite: CH 122, CH 202, or CH 222 with a grade of C or better.

Workload Expectation:

Students taking chemistry courses are expected to work a minimum of 3-4 hours of work per week outside of class for every credit hour. Examples of outside work include reading, review lecture materials, study time, practice problems, homework assignments, and doing lab assignments.

Required Course Materials:

Access Code for Knewton Alta Online Homework *(The access code from last term works.)*

For your first time using Knewton Alta online homework platform, please access homework via Moodle.
By clicking one of the homework assignments, the Knewton Homework will prompt you to enter access code. You can purchase this access code online through Knewton website or LBCC bookstore. Knewton Alta offers a grace period on payment; for most courses, this is 14 days from the first day of the term. You can also choose monthly payment option as well.

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

8 lab reports	8 x 10 pt.	=	80 pt. (13%)
6 Homework	6 x 20 pt.	=	120 pt. (19%)
Chapter 14 – 19 exams	6 x 70 pt.	=	420 pt. (68%)
Total		=	**620 pts** (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 assessments, final exam, homework, labs, etc.; your letter grade will NOT be assigned based on the instructor's subjective opinion of your effort in the course.**

Live Hangout Sessions:

A live hangout session is on every Thursday from 11 am – 12 pm. You can access this session via Moodle and click on the Zoom link. These hangout 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 hangout session to catch up with each other, work on worksheets, and address any concerns.

These live hangout sessions are NOT mandatory but students are encouraged to participate. If you are unable to attend, the record of the meeting will be posted on Moodle.

Exam Policies:

For this online course, there will be no cumulative final exam. The chapter exams will be used to evaluate your understanding of the materials that you learn from each chapter similar to the Learning Assessments from last term. Chapter exams will be given on most Friday (see schedule). Chapter exams must be taken on the scheduled date unless prior arrangement is made.

The exams will be written for students to complete within 50 minutes, again similar to the Learning Assessments last term. However, I would like to provide the extended time (2x) to everyone in the course. Thus, everyone in the course, including those students who have requested accommodation, will be given TWO hours time limit on the chapter exam.

The chapter exams will be available for students 24 hours from Friday, 8 AM to Saturday 8 AM. However, once you start the exam, you will have two hours to complete it.

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. Refer to the schedule for homework due dates. 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 in the lecture schedule.

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 2 days late. However, students will received a deducted **20% penalty** from the completed scored per day late.*

Laboratory Exercise:

The online instructions, videos, and experimental data will be posted on Moodle a week before the pre-lab deadline. The pre-labs are due every Thursday by 11:59 pm (see course schedule). You will submit the lab exercise electronically. Thus, there is no need to purchase lab notebook for this term.

Generally, students will read the online instructions (lab manual) for each week. Then, set up the pre-lab (the same way that you did last term) and submit it 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. The post-labs (include results, discussion & conclusion, and supplementary questions) are due the following week.

Again, the lab materials will be available for you to access a week before the pre-lab deadline. Thus, You are welcome to complete the lab any day and any time, as long as you submit the pre-lab and post-lab by the deadline.

The laboratory experience is a vital part of this course. Students are expected to receive at least 70% of the total lab points in order to pass the course regardless of passing the lecture. Failure to complete the laboratory work or to hand in all of the assigned laboratory reports may result in a lowered grade.

*For late lab assignments, students can turn in completed lab assignments after the deadline up to 2 days late. However, students will received a deducted **20% penalty** from the completed scored per day late.*

Resources:

Your success is very important to me! I encourage you to seek help from one or more of the following resources:

1. Instructor office hours (see information on Moodle)
2. Ask questions during hangout sessions
3. Science Help Desk
4. Learning Center Support (https://www.linnbenton.edu/current-students/study/learning-center/)

Science Help Desk:

The remote Science Help Desk will be offered this term via Zoom. The Help Desk is staffed approximately 20 hours per week. Hours of the Help Desk and access to Zoom links will be posted on Moodle.

Tips for Success:

- Participate and complete lecture and lab lessons!
- Review lecture notes after lecture; clarify confusing points immediately
- Doing homework problems regularly
- Form a study group; take turns "teaching" each other concepts/problems
- Use your lecture notes to guide your studying
- The homework problems should be considered the minimum number of problems to do to ensure success
- Repeat homework problems and/or worksheet problems until you can do them quickly, without looking at any notes or answer keys
- Address problems as they arise. The sooner you attempt to resolve an issue, the better!

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 14 Acids and Bases

14.1 – Definitions of Acid and Base
14.2 – Acid and Base Strength and Their Molecular Structures
14.3 – Acid Ionization Constant
14.4 – Autoionization of Water, pH, and pOH
14.5 – Base Ionization Constant
14.6 – pH and pOH Calculations for Strong Acids and Strong Bases
14.7 – pH and pOH Calculations for Weak Acids and Weak Bases
14.8 – The Acid-Base Properties of Salts

Chapter 15 Neutralization Reaction, Buffers, and Titrations

15.1 – Neutralization Reaction
15.2 – Buffers
15.3 – Titrations and pH curves

Chapter 16 Precipitation and Aqueous Ionic Equilibrium

16.1 – Precipitation Reactions
16.2 – Solubility Equilibria and the Solubility Product Constant
16.3 – Coupled Equilibria

Chapter 17 Thermodynamics

17.1 – Spontaneous and Nonspontaneous Processes
17.2 – Entropy and the Second & Third Laws of Thermodynamics
17.3 – Gibbs Free Energy

Chapter 18 Electrochemistry

18.1 – Redox Reactions
18.2 – Spontaneous Redox Reactions – Galvanic (or Voltaic) Cells
18.3 – Electrode and Cell Potentials
18.4 – Batteries and Fuel Cells
18.5 – Nonspontaneous Redox Reactions – Electrolysis
18.6 – Potential, Free Energy, and Equilibrium

Chapter 19 Organic Compounds

19.1 – Organic Compounds
19.2 – Structural Representations
19.3 – Isomerism
19.4 – Hydrocarbons
19.5 – Nomenclature of Hydrocarbons
19.6 – Functional Groups

CH 123 Online Schedule – Spring 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.

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

Week No.	Monday	Tuesday	Wednesday	Thursday	Friday
1 (4/6-4/10)	Course Overview 14.1 – 14.2	14.3	14.4	Live Hangout Session No Lab This Week	14.5
2 (4/13-4/17)	14.6	14.7	14.8	Live Hangout Session *Lab 1: pH of Acids, Bases, & Salts* **Pre-Lab 1 Due**	15.1
3 (4/20-4/24)	15.2 **HW 14 Due**	15.3	15.3	Live Hangout Session *Lab 2: Buffers* **Pre-Lab 2 Due** **Post-Lab 1 Due**	***Ch. 14 Exam***
4 (4/27-5/1)	16.1 **HW 15 Due**	16.2	16.2	Live Hangout Session *Lab 3: Acid Content in Vinegar* **Pre-Lab 3 Due** **Post-Lab 2 Due**	***Ch. 15 Exam***
5 (5/4-5/8)	16.3 **HW 16 Due**	17.1	17.2	Live Hangout Session *Lab 4: Acid Content in Fruit Juice* **Pre-Lab 4 Due** **Post-Lab 3 Due**	***Ch. 16 Exam***
6 (5/11-5/15)	17.2	17.3	17.3	Live Hangout Session *Lab 5: Determine K_{sp}* **Pre-Lab 5 Due** **Post-Lab 4 Due**	18.1
7 (5/18-5/22)	18.1 **HW 17 Due**	18.2	18.3	Live Hangout Session *Lab 6: Thermodynamics* **Pre-Lab 6 Due** **Post-Lab 5 Due**	***Ch. 17 Exam***
8 (5/25-5/29)	*Holiday*	18.4	18.5	Live Hangout Session *Lab 7: Electrochemical Cells* **Pre-Lab 7 Due** **Post-Lab 6 Due**	18.6
9 (6/1-6/5)	19.1 **HW 18 Due**	19.2	19.3	Live Hangout Session *Lab 8: From Fat to Fuel* **Pre-Lab 8 Due** **Post-Lab 7 Due**	***Ch. 18 Exam***
10 (6/8-6/12)	19.4	19.5	19.6	Live Hangout Session **HW 19 Due** **Post-Lab 8 Due**	***Ch. 19 Exam***