(Online via Moodle)
College Chemistry III

CH 123 – Summer 2020

CRN: 15867 (Lecture) and 15992 (Lab)
(Weekly Class Time of 4 hours Lecture and 3 hours Lab)

Instructor: Ommidala Pattawong, Ph.D.

Office Hours: Thursday 10 am – 12 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 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. The lesson modules are flexible. **However, the deadline for homework, pre-lab, post-lab, and exams are fixed.**

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

Standard equipment recommendation

- Broadband internet
- A computer with 256g SSD, 8G RAM, i5 6th gen processor (or equivalent functionality)
- Device with a microphone, speaker, and a camera
- Students can consult Standard Recommendation 1 or Standard Recommendation 2 if they are looking for a product recommendation

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, 3 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 22 (4 + 3 + 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 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.

Required Course Materials:

- 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:

6 lab reports	6 x 20 pt.	=	120 pt. (18%)
6 Homework	6 x 20 pt.	=	120 pt. (18%)
Chapter 14 – 19 exams	6 x 70 pt.	=	420 pt. (64%)
Total		**=**	**660 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:

For this online course, there will be no cumulative final exam. Three exams throughout the term will be used to evaluate your understanding of the materials. The exams will be given on most Friday (see schedule). The exams must be taken on the scheduled date unless prior arrangement is made.

The exams will be designed for students to complete within 90 minutes. However, I would like to provide the extended time (2x) to everyone in the course to account for any technical issues that you may encounter during the exam. Thus, everyone in the course, including those students who have requested accommodation, will be given THREE hours time limit for each exam.

The exams will be available for students on Moodle from Friday, 8 AM to Saturday 11 AM. However, once you start the exam, you will have three 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!

The exams are open book. You are allowed to use ONLY our class materials that are available on our course Moodle site and your own notes on the exams. You may not use any other outside websites including but not limited to Chegg, CourseHero, and/or Reddit. The use of these sites violates academic integrity. If your exam is found posted on any website, you will receive a score of zero on the exam and will be reported for cheating.

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 20 points. Homework is due by 11:59 pm on the dates listed in the lecture schedule. Keep in mind a typical science course takes 3-4 hrs of work per week outside of class for every credit hour. That works out to 15 to 18 hours per week of study and prep time for this course.

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 **10% penalty** from the completed scored per day late.*

Instructions to Sign Up for Knewton for the first time user:

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.**

Laboratory Exercise:

The laboratory experience is a vital part of this course. **Students must 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.

The online instructions, videos, and experimental data will be posted on Moodle a week before the deadline. You will need to complete the pre-lab questions prior to accessing lab exercise. You will submit the lab assignments 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, 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 pre-lab and post-lab should be written in your own words**. **Any plagiarisms from students in the course and/or former students who took the course will result in a score of zero for the lab assignment.**

Again, the lab materials will be available for you to access a week before the 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.

*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 **10% penalty** from the completed scored per day late.*

Live Review Sessions:

A live review session is on some Thursday from 10 am – 12 pm (see schedule). You can access this session via Moodle and click on the Zoom link. These review 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 review session to catch up with each other, review lecture materials, work on practice problems, and address any concerns. These live review 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.

Tips for Success:

- Participate and complete lecture and lab lessons!
- Review lecture notes after lecture; clarify confusing points immediately
- Doing homework problems regularly
- 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 – Summer 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 (6/29-7/3)	14.1 – 14.2	14.3	14.4	Live Review Session (10 am – 12pm)	
2 (7/6-7/10)	14.5	14.6 – 14.7	14.8	*Lab 1: pH of Acids, Bases, & Salts* **Pre-Lab 1 Due**	
3 (7/13-7/17)	15.1 **HW 14 Due**	15.2	15.3	*Lab 2: Buffers* **Pre-Lab 2 & Post-Lab 1 Due**	
4 (7/20-7/24)	16.1 **HW 15 Due**	16.2	*Study Day For Exam*	Live Review Session (10 am – 12pm)	**Exam Ch. 14-15**
5 (7/27-7/31)	16.3	17.1	17.2	*Lab 3: Acid Content in Vinegar* **Pre-Lab 3 & Post-Lab 2 Due**	
6 (8/3-8/7)	17.3 **HW 16 Due**	18.1	18.2	*Lab 4: Acid Content in Fruit Juice* **Pre-Lab 4 & Post-Lab 3 Due**	
7 (8/10-8/14)	18.3 **HW 17 Due**	18.4 – 18.5	*Study Day For Exam*	Live Review Session (10 am – 12pm)	**Exam Ch. 16-17**
8 (8/17-8/21)	18.6	18.6	19.1	*Lab 5: Thermodynamics* **Pre-Lab 5 & Post-Lab 4 Due**	
9 (8/24-8/28)	19.2 **HW 18 Due**	19.3	19.4	*Lab 6: Electrochemical Cells* **Pre-Lab 6 & Post-Lab 5 Due**	
10 (8/31-9/3)	19.5	19.6	*Study Day For Exam* **HW 19 Due**	Live Review Session (10 am – 12pm) **Post-Lab 6x Due**	**Exam Ch. 18-19**