**Chemistry 223**
**General Chemistry**
**Spring 2021**

| Instructor | Email | Review Sessions |
|---|---|---|
| Marci Moling | molingm@linnbenton.edu | TBA |

**Lectures:**
Mondays 10:00-11:20 am over Zoom (CRN 40171)
Mondays 12:00-1:20 pm over Zoom (CRN 43275)

**Laboratory Instructor:**
Mahsa Khoshbakht; khoshbm@linnbenton.edu
Tuesdays 8:00-10:20 am in MH-214 and online (CRN 43657)
Tuesdays 11:00 am-1:20 PM in MH-214 and online (CRN 43658)
Tuesdays 2:00-4:20 pm in MH-214 and online (CRN 43659)

**Course Description:**
Third course of a three-term general chemistry sequence for students in science, engineering, and the professional health programs.

**Science Help Desk:**
The Science Help Desk will be available via Zoom. More information regarding the Science Help Desk will be posted to Moodle.

**Outcomes:**
- Solve scientific problems with quantitative methods regarding rates of reactions, chemical equilibrium, thermodynamics, and electrochemistry.
- Apply chemical principles related to chemical kinetics, rates and mechanisms of chemical reactions, equilibrium, thermochemistry, and electrochemistry.
- Work safely in a laboratory environment while observing and accurately recording measurements related to chemical phenomena.

**Prerequisites:**
CH 222 with a C or better. Corequisite: CH 223L.

**Required Materials:**
*Chemistry: The Molecular Nature of Matter and Change,* 8th or 9th Ed., Silberberg
*Chemistry 223 Lecture Manual*
Knewton Alta online homework access
Chem 223 At-Home Lab Kit
Non-graphing/non-programmable Scientific Calculator

**NOTE: You should not have to pay for the textbook if you purchased access as a DDA for Chem 221. If you purchased Knewton for the year, then you do not need to purchase another access code. Access to the text and Knewton can be found on the course Moodle website.

**Course Expectations:**
Class will be both synchronous and asynchronous. We will meet one day a week over Zoom to review worksheets, exams, and answer questions. Since we are only seeing each other once a week, I have certain expectations for this course:

1. Check your email and Moodle at least once a day.
2. Since we are not in a normal classroom setting, it is expected that each student will watch the lecture videos provided on Moodle. Since we are using a lecture manual, it is HIGHLY recommended that you attempt to work through the manual on your own before watching the videos. The answers will be provided, but in this type of learning environment it is not enough for you to just watch the videos, you need to be an active participant in your learning.
3. Keep up with the lecture schedule provided at the end of this syllabus.
4. Keep track of when materials are due/posted by checking the weekly to-do list on Moodle.
5. You will upload worksheets and exams to Moodle. Different formats will be permitted, but it may be easiest for you to use a scanning app such as Google Drive or Adobe Scan. These apps allow you to take a picture of your document and save them as one PDF file.
6. Follow proper Zoom etiquette. We may not be face-to-face, but you should treat the experience as if you are face-to-face with myself and your fellow students. The following links may be helpful regarding Zoom etiquette and how to use Zoom.

https://www.psychologytoday.com/us/blog/do-the-right-thing/202003/top-10-tips-good-zoom-hygiene-and-etiquette-in-education

https://atguides.humboldt.edu/m/zoom/l/752185-how-do-students-use-zoom

https://zoom.us/docs/doc/Student%20Tips%20for%20Participating%20in%20Online%20Learning.pdf

**Workload Expectations:**
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. Keep in mind, most students earning an "A" spend a minimum of **15-20 hrs per week** attending Zoom sessions, watching lecture videos, working on Knewton homework, completing worksheets, posting and replying to weekly forums, completing exams, preparing for lab, attending lab, writing lab reports, and studying.

**Attendance and Participation:**
You are expected to attend the Monday Zoom sessions. Also, you will be expected to post one question to the weekly forum and reply to one post from a fellow classmate.

**Homework Problem Sets**:
Online homework will be assigned for each chapter. Homework will be completed using Knewton Alta through Moodle. Refer to the lecture schedule for homework due dates. Homework is due at 11:59 pm on the due date. Late homework will be accepted up to one week after the due date at a 15% deduction in points.

**Instructions to Sign Up for Knewton Online Homework:**
1. Log into Moodle and navigate to the course.
2. Click on any homework assignment to launch Knewton.

If you have issues with Knewton, you can use the feedback button, the online chat, or email support@knewton.com.

**Note: If you had access to Knewton last term, you would not need to purchase another access code.

**Worksheets:**
Seven worksheets will be given throughout the term. Worksheets will be available on Wednesdays and will be due on Sundays at 11:59 pm, except for the last worksheet which will be due on a Friday. I encourage you to work in groups remotely to complete them. We will review the worksheets on the Monday Zoom class following the due date. The worksheets will reflect material from that week. So, you may want to work on them as you complete the different lecture video sections. The worksheets are good practice for exams and assist with keeping students up to date with material. **No make-up worksheets will be given.** The lowest worksheet score will be dropped.

**Exams:**
An exam will be given after every other chapter. The exams will be open from Friday at 8 am until Sunday at 11:59 pm. You will have 3 hours to complete the exams. The exams will consist of multiple-choice and/or true/false questions, as well as a problem-solving section. Exams will be open note and open book. Each exam will contain an academic integrity statement, by typing your name in the box, you will indicate that you have thoroughly read the statement. **No make-up exams will be given.** Any missed exams will result in a 0.

**Google Scan (Android only) or Adobe Scan (Android and iPhone) for submitting quizzes, exams, or lab reports.**

To use Google Scan: On your Android device, Open the Google Drive App, click the + at the bottom right of the screen to Add an item, and Tap Scan (it may have a camera icon). Use your camera to take pictures, and the app will convert it to a PDF file.

To use Adobe Scan: On your device, download the Adobe Scan app. Open it and create an account. Use your camera to take pictures and the app will convert it to a PDF file.

If you have trouble uploading the PDF file from your phone to Moodle, try emailing it to yourself and use your desktop/laptop to upload the file.

**Laboratory**:
There will be two types of labs:

- In-person—to accommodate social distancing, a maximum of 10 students may attend a given face-to-face lab session. Each student will complete 4 in-person labs.
- Virtual/At-Home—there will be no meeting for these labs. Data will be acquired via the at-home lab kit, Moodle, or through online simulations.

The following laboratory information will be posted to the CH 223L Moodle course page.

- A PDF file of each lab experiment.
- Pre-lab lecture videos.
- Experiment videos (if a virtual lab that is not an at-home or simulation lab).
- Links for uploading your pre-lab assignment and lab report.

The pre-lab assignment will be due on Mondays by 11:59 pm. Due dates for the lab reports are in the lab schedule at the end of the syllabus. Late lab reports receive a 10% per day mark down. **You must receive at least 70% of the total lab points in order to pass the course regardless of passing the lecture. This is a lab class and in order to pass the course you must pass the laboratory component. Lab reports will not be accepted if they are turned in one week after their due date.**

**Grading:**

| | |
|---|---|
| 3 Exams | 40% |
| 6 Worksheets | 20% |
| 6 Knewton Homeworks | 10% |
| Attendance and Participation | 10% |
| Lab: 1 Review Worksheet and 10 Lab Reports | 20% |

**Course Grade:**

| | | | | |
|---|---|---|---|---|
| 90-100% A | 80-89% B | 70-79% C | 60-69% D | 0-59% F |

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.

**Drop/Withdraw Policy:**
If you are withdrawing from the class, you must 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 emailing faoffice@linnbenton.edu.

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:**
Academic integrity is the principle of engaging in scholarly activity with honesty and fairness and participating ethically in the pursuit of learning. Academic integrity is expected of all learners at LBCC. Behavior that violates academic integrity policies at LBCC includes cheating, plagiarism, unauthorized assistance or supporting others in engaging in academic dishonesty, knowingly furnishing false information, or changing or misusing college documents, among others. LBCC students are responsible for understanding and abiding by the College's academic integrity policy.

If I become aware of academic misconduct, I will meet with the student(s) in question to discuss the matter and may assign a consequence of an "F" or "NP" for part of the assignment, the entire assignment, or the course overall. I will also report the matter to the Manager for Student Conduct and Retention, and the College may take further disciplinary action. When in doubt if something constitutes academic misconduct, please contact me and ask for clarification.

**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 this class, please contact your instructor as soon as possible to discuss your needs. If you think you may be eligible for accommodations but are not yet registered with CFAR, please visit the CFAR Website for steps on how to apply for services. Online course accommodations may be different than those for on-campus courses, so it is important that you make contact with CFAR as soon as possible.

**LBCC Comprehensive Statement of Nondiscrimination:**
LBCC prohibits unlawful discrimination based on race, color, religion, ethnicity, and 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.

**Lecture Schedule:**

****Note: This schedule of topics, homework due dates, and exam dates is subject to change.**

| | **Mon. Zoom** | **Lecture Videos** | **Lecture Manual Pages** | **Knewton Homework** | **Assessments** |
|---|---|---|---|---|---|
| **Week 1** 3/29-4/2 | Syllabus and Intro | 16.1-16.5 | 2-22 | | Worksheet 1 Due Sunday (4/4) by 11:59 pm |
| **Week 2** 4/5-4/9 | Review Worksheet 1 | 16.6-16.7, 17.1-17.3 | 23-37 | *Ch 16 Knewton Due Fri (4/9) at 11:59 pm* | Worksheet 2 Due Sunday (4/11) by 11:59 pm |
| **Week 3** 4/12-4/16 | Review Worksheet 2 | 17.4-17.6, 18.1-18.2 | 37-56 | *Ch 17 Knewton Due Fri (4/16) at 11:59 pm* | Exam 1 (Chapters 16 & 17) Available 4/16-4/18 |
| **Week 4** 4/19-4/23 | Review Exam 1 | 18.3, 18.9, 18.5, 18.4, 18.6 | 56-67 | | Worksheet 3 Due Sunday (4/25) by 11:59 pm |
| **Week 5** 4/26-4/30 | Review Worksheet 3 | 18.7, 19.1 | 68-81 | *Ch 18 Knewton Due Fri (4/30) at 11:59 pm* | Worksheet 4 Due Sunday (5/2) by 11:59 pm |
| **Week 6** 5/3-5/7 | Review Worksheet 4 | 19.2, 19.3 | 81-94 | | Worksheet 5 Due Sunday (5/9) by 11:59 pm |
| **Week 7** 5/10-5/14 | Review Worksheet 5 | 19.3, 19.4, 20.1 | 94-113 | *Ch 19 Knewton Due Fri (5/14) at 11:59 pm* | Exam 2 (Chapters 18 & 19) Available 5/14-5/16 |
| **Week 8** 5/17-5/21 | Review Exam 2 | 20.2-20.4 | 114-127 | *Ch 20 Knewton Due Fri (5/21) at 11:59 pm* | Worksheet 6 Due Sunday (5/23) by 11:59 pm |
| **Week 9** 5/24-5/28 | Review Worksheet 6 | 21.1-21.3 | 128-139 | | |
| **Week 10** 5/31-6/4 | **Holiday No Class** | 21.4 | 140-148 | *Ch 21 Knewton Due Fri (6/4) at 11:59 pm* | Worksheet 7 Due Friday (6/4) by 11:59 pm |
| **Week 11** 6/7-6/11 | | | | | Exam 3 (Chapters 20-21) Available 6/7-6/9 |

**Lab Schedule:**
*****Note: Labs written in red are in-person and labs written in blue are at-home or virtual.**

| | Laboratory | Laboratory Report Due Dates |
|---|---|---|
| **Week 1** 3/30 | Chem 222 Review Worksheet | |
| **Week 2** 4/6 | Group A: Kinetics of Crystal Violet<br>Group B: Alka-Seltzer Lab | **All:** Chem 222 Review Worksheet Due Tuesday by 11:59 pm |
| **Week 3** 4/13 | Group A: Alka Seltzer Lab<br>Group B: Kinetics of Crystal Violet | **Group A:** Kinetics of Crystal Violet Due Tuesday by 11:59 pm<br>**Group B:** Alka-Seltzer Lab Due Tuesday by 11:59 pm |
| **Week 4** 4/20 | Group A: Le Chatelier's Principle<br>Group B: Acid-Base Properties of Home Products | **Group A:** Alka-Seltzer Lab Due Tuesday by 11:59 pm<br>**Group B:** Kinetics of Crystal Violet Due Tuesday by 11:59 pm |
| **Week 5** 4/27 | Group A: Acid-Base Properties of Home Products<br>Group B: Le Chatelier's Principle | **Group A:** Le Chatelier's Principle Due Tuesday by 11:59 pm<br>**Group B:** Acid-Base Properties Due Tuesday by 11:59 pm |
| **Week 6** 5/4 | Group A: Titration of Polyprotic Acids<br>Group B: Buffered Solutions and Calculations | **Group A:** Acid-Base Properties Due Tuesday by 11:59 pm<br>**Group B:** Le Chatelier's Principle Due Tuesday by 11:59 pm |
| **Week 7** 5/11 | Group A: Buffered Solutions and Calculations<br>Group B: Titration of Polyprotic Acids | **Group A:** Titration of Polyprotic Acids Due Tuesday by 11:59 pm<br>**Group B:** Buffered Solutions Due Tuesday by 11:59 pm |
| **Week 8** 5/18 | Group A: Solubility and Thermodynamics<br>Group B: Thermodynamics | **Group A:** Buffered Solutions Due Tuesday by 11:59 pm<br>**Group B:** Titration of Polyprotic Acids Due Tuesday by 11:59 pm |
| **Week 9** 5/25 | Group A: Thermodynamics<br>Group B: Solubility and Thermodynamics | **Group A:** Solubility and Thermo Due Tuesday by 11:59 pm<br>**Group B:** Thermodynamics Due Tuesday by 11:59 pm |
| **Week 10** 6/1 | All: Electrochemical Lab & Extra Credit CH 223 Review | **Group A:** Thermodynamics Due Tuesday by 11:59 pm<br>**Group B:** Solubility and Thermo Due Tuesday by 11:59 pm |
| **Week 11** 6/8 | | **All:** Electrochemical Lab and CH 223 Review Due Tuesday by 11:59 pm |