**Chemistry 221 General Chemistry (5 credits) Winter 2020**

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| **Lecture** |  |  |  |  |
| **CRN** | **Instructor/Office/Email** | **Lecture Days/Time** | **Location** | **Office Hours** |
| 31723 | Beth Manhat - MH 212  [manhatb@linnbenton.edu](mailto:manhatb@linnbenton.edu) | T/R 8:00-9:50 | MH 208 | TBD |
| **Lab** |  |  |  |  |
| **CRN** | **Instructor/Office/Email** | **Lab Day/Time** | **Location** |  |
| 33860 | Shawn McDonald – MH 208 [mcdonas@linnbenton.edu](mailto:mcdonas@linnbenton.edu) | W 11:00-1:50 | MH 206 |  |
| 33862 |  | W 8:00-10:50 | MH 206 |  |
| 33864 | Beth Manhat  [manhatb@linnbenton.edu](mailto:manhatb@linnbenton.edu) | W 2:00-4:50 | MH 206 |  |

**Science Help Desk:** The Science Help Desk is on the 1st floor of Madrone Hall near the elevators. It is staffed ~ 20 hrs/wk with hours posted throughout MH and at the Help Desk.

Please check the syllabus and Moodle for general class information. I regularly check email regularly (less on weekends, use appropriate subjects.), so allow 24 hrs for a response. Class documents, notes, homework, and exams/quizzes dates will be posted on Moodle.

**Course Description:** This is the 1st in a 3-course sequence. This course is recommended for chemistry and other natural science and pre-professional degree seekers. This course will cover measurements, classification and properties of matter, nomenclature, atomic structure and the periodic table, solution chemistry and chemical reactions, and introduce gas laws, thermodynamic principles, and quantum relationships.

**Workload Expectation:** Students taking chemistry courses are expected to work a minimum of 4 hours per week outside of class for every credit hour. Examples are not limited to reading the text, reviewing lecture materials, practice problems, and doing homework assignments and completing lab assignment.

**Required Instructional Materials:**

*1. Chemistry: The Molecular Nature of Matter and Change,* 8th Ed., Silberberg  
 (redfin, Moodle) The textbook is a **D**igital **D**irect **A**ccess text and is included in your tuition unless you opt-out. Access to the text can be found on the course Moodle website.

2. Chemistry 221 Lab Manual (LBCC Bookstore, $5.50)

3. Knewton Alta online homework access (44.95$/yr if you did NOT take CH150 at LBCC)

4. Carbonless Lab Notebook

5. Non-graphing/non-programmable Scientific Calculator (examples: TI 30xa, TI 30X IIs, Casio fx-260, or HP 10s). Some TI 30xa are available for use on exams and quizzes.

**Optional Materials:** 1. Lab coat 2. Personal Safety Goggles

**Prerequisites:** MTH 095 and any one of the following: a passing score on the chemistry entrance exam; CH 150 with a grade of “C” or better; CH 121 with a grade of “C” or better; CH 112 with a grade of “C” or better. **Corequisite:** CH221L, MTH111

**Assessment Criteria and Methods of Evaluation:**

**Tentative Grade Distribution  
Activity Percentage**Homework 10  
Lab 20

**Grading Scale:** The course is NOT graded on a curve.

A = 90% – 100%

B = 80% – 89%

C = 70% – 79%

D = 60% – 69%

F = below 59%

Quizzes (5) 10

Midterm exams (3) 40  
Final Exam (1) 20

A grade of incomplete (IN) may be assigned with instructor discretion AND may only be assigned at a time in which the student has a passing grade.

**Homework Online (10%):**

* To succeed in chemistry, like learning a foreign language, you should study and practice most days. In this way, you will find the work are easier than if you try and completed homework immediately before the due date. Online homework will be assigned for each chapter. Homework will be completed using Knewton through Moodle. Refer to the schedule for homework due dates. Homework is due at 11:59 pm on the due date. Late Homework will be accepted with an automatic deduction of 15% and can be submitted up to 1 week late. The last day to submit homework is the night before the final exam.
* Each online homework assignment is worth 100 points. All homework sections per chapter will be averaged to determine your homework score.

**Quizzes (10%):** The quiz problems are good practice for exams and help students keep up with material. 6 quizzes will be given throughout the term (see the schedule for quiz dates). The lowest quiz score will be dropped from your final grade.

**Exams (60% total):** There will be 3 in class mid-term Exams and 1 Final Exam, as listed on the schedule in class. Chemistry is naturally cumulative, and you will find an overlap of material. Mid-terms cover chapter material and will consist of multiple choice and short answer questions (calculations, explanations, drawing-related questions, or the like). I provide exam reviews with answers. The final exam is cumulative.

*Make-Up Quizzes and Exams:*

If you know you will be missing a quiz or exam > 1 week in advance, you can schedule make-up exam or quiz in the testing center (RCH-111).

You can schedule **one missed** exam/quiz in the testing center (RCH-111).

It is your responsibility to coordinate contact the instructor as to the date you will complete any make-up assessment.

**Class Participation**: It is important to maintain a safe learning environment by showing unconditional respect for others. This is demonstrated by listening to each other and taking one and other seriously. Be courteous concerning electronic use and food.

**Labs (20% total)**

* Students arriving to lab after the lab’s introduction (~ 15 mins) may not be allowed to remain in the lab that day.
  + - You could miss important changes to the lab or safety information
* Open toed shoes are not allowed in lab. Anyone wearing open toed shoes is required to leave and will be given a zero for the lab.
* Labs are due by the **beginning of the next lab in class after the completion of the experiment.** Late labs accepted for with 10% markdown per day (up to a week late).
* You must pass the laboratory section with a 70% to pass this course.
* Missing 3 labs will result in an automatic failure of the course
  + Failing to turn in a lab counts as a missed lab
* Your lowest lab score will be dropped from your grade. There are no makeup labs.
* You must attend the lab period to get points for the lab.
* Additional Lab Information will be given during the first lab meeting.

## **Student Learning Outcomes:**

1. Differentiate the historical developments leading to the development of the atomic theory and the Periodic Table.
2. Solve scientific problems with quantitative methods using dimensional analysis and/or algebra regarding unit conversions, stoichiometry, gas laws, and thermochemistry.
3. Apply chemical principles associated with chemical and physical changes and properties of matter, nomenclature, chemical reactions, thermochemistry, the kinetic theory of a gas, and quantum theory.
4. Work safely in a laboratory environment while observing and accurately recording measurements related to chemical phenomena.

**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 BP-1015](https://www.linnbenton.edu/faculty-and-staff/administrative-information/policies/board-policies-and-administrative-rules/1000-series-the-college/board-policy-series-number-1050-equal-opportunity-statement.php). Title II, IX, & Section 504: Scott Rolen, CC-108, 541-917-4425; Lynne Cox, T-107B, 541-917-4806, LBCC, Albany, Oregon. To report: [linnbenton-advocate.symplicity.com/public\_report](http://linnbenton-advocate.symplicity.com/public_report)

**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. 7030-01.

**Drop/Withdraw Policy:**

* If you are withdrawing from class, you must file a Schedule Change Form with Registration or use WebRunner. To receive a tuition refund, drop the class by the 2nd Monday of the term. To withdraw from the class, drop the class by the end of the 7th week of the term. The course will record as a “W” on your transcript.
* If you stop attending the course and DO NOT formally withdraw, you will accumulate zeroes for assignments not turned in and receive the grade in accordance with work completed.
* If you received financial aid or veteran’s benefits, talk with associates at the appropriate office to determine what effects on eligibility dropping a course will have. You can contact the Financial Aid Office by calling (541) 917-4850 or visit the Financial Aid Office in Takena Hall.

**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.

**Course Content and Outcome Guide:**

<http://linnbenton.smartcatalogiq.com/current/Catalog/Courses/CH-Chemistry/200/CH-221>

**LBCC Grading Guidelines**

<https://linnbenton.smartcatalogiq.com/en/current/Catalog/Academic-Information-and-Regulations>

**Student Code of Conduct/ Rights and Responsibilities**

<https://www.linnbenton.edu/current-students/administration-information/policies/students-rights-responsibilities-and-conduct.php>

**CH221 Winter 2020** Tentative Schedule

**Quiz and Exam dates are NOT TENATIVE**

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Lecture (T, Th)** | **Lab (W)** | **HW** |
| **1** | 01/07 – Syllabus, 1.1-1.4  01/09 – 1.4, 2.1 | 8 Safety, Lab Format,  Sig Figs & Naming Review |  |
| **2** | 01/14 –2.1-2.5  01/16 – ***Quiz 1,*** 2.5-2.7 | 15 Exp. 1  Density of Crayons | *Ch 1 Knewton*  *Due Wed (01/15)* |
| **3** | 01/21 – 3.1-3.201/23 – ***Exam 1 (CH 1 & 2)***, 3.3 | 22 Exp. 2  Formula of a Hydrate | *Ch 2 Knewton*  *Due Wed (01/22)* |
| **4** | 01/28 – 3.3-3.4  01/30 – ***Quiz 2****,* 3.4, 4.1 | 29 Exp. 3  Household Chemicals |  |
| **5** | 02/04 – 4.4  02/06 – ***Quiz 3,*** 4.2-4.3 | 5 Exp. 4  Vinegar Lab | *Ch 3 Knewton*  *Due Wed (02/05)* |
| **6** | 02/11 – 4.5, 5.1  02/13 – ***Exam 2 (CH 3 & 4)***, 5.3 | 12 Exp. 5  Chemical Reactions | *Ch 4 Knewton*  *Due Wed (02/12)* |
| **7** | 02/18 – 5.3-5.5 02/20 – ***Quiz 4***, 5.5-5.6 | 19 Exp. 6  Gas Constant |  |
| **8** | 02/25 – 6.1-6.2  02/27 – ***Quiz 5***,6.3-6.5 | 26 Exp. 7  Specific Heat of Pennies | *Ch 5 Knewton*  *Due Wed (02/26)* |
| **9** | 03/03 – 6.6-7.1  03/05 – ***Exam 3 (CH 5 & 6)***, 7.1 | 4 Exp. 8  Hess’s Law | *Ch 6 Knewton*  *Due Wed (03/04)* |
| **10** | 03/10 – 7.2-7.3  03/12 – ***Quiz 6***, 7.3-7.4 | 11 Review for Final | *Ch 7 Knewton*  *Due Mon (03/16)* |
|  | 03/17 – **Final Exam**  7:30 – 9:20 am  03/19 –NO CLASS | 18No meeting | *Last Knewton*  *Mon (3/16)* |

Drop Date: 01/13/20 Withdraw Date: 02/22/20

**Flexibility Statement:** The instructor reserves the right to modify course content and/or substitute assignments and learning activities in response to institutional, weather or class situations.