



Department of Natural Sciences
24-115-50: General Chemistry I Laboratory, 1 Credit Hour
Dual Credit – Academic Year 2020-2021

Instructor: Mrs. Jennifer Reed

Email Address: jreed@nwmissouri.edu

Office Hours: Virtual Office Hours MTWRF: 2:45-3:10 pm Other appointments – face-to-face and via Zoom conferencing – available upon request. Available through email 8:00 am – 4:15 pm weekdays.

Additional Dual Credit Zoom Office Hours will be posted in the 'Getting Started' section on Northwest Online

Course Description:

Laboratory course which must be taken concurrently with Chem 114. Three hours of laboratory and recitation. The fundamental principles of chemistry are demonstrated in the laboratory, and the ultimate application of chemistry is in the laboratory. Consequently, this course gives "hands on" laboratory experience, and the experiments will reinforce and clarify concepts from the lecture portion of the class.

Student Learning Outcomes

Assessment Methods

| | |
|---|--|
| Course Outcome: Use symbolism and models in the representation of atomic structure and chemical processes to reinforce lecture concepts. | Lab 7: Models of the Hydrogen Atom |
| Course Outcome: Master the use of basic laboratory equipment and techniques of laboratory measurement. | Lab 2: Density |
| Course Outcome: Communicate/follow scientific procedures and properly record data individually and as part of a team to accomplish individual and team goals. | Completion of laboratory experiments, post-lab questions/assignments |
| Course Outcome: Utilize information to generate reasonable hypotheses and draw educated conclusions. | Lab 8: VSEPR Structures |
| Course Outcome: Utilize Excel to perform mathematical calculations, statistical analysis, and represent data graphically. | Lab 3: Intro to Excel Lab |
| Course Outcome: Evaluate data for usefulness and accuracy using statistical parameters (e.g. mean, average, standard deviation, and confidence levels) and linear regression analysis. | Lab 3: Intro to Excel Lab |
| Course Outcome: Reorganize information into table/graphical form in order to draw conclusions and present information clearly. | Lab 6: Gas Properties |

Course Requirements:

Laboratory policies, such as Safety, will be discussed during the first laboratory period. Students who do not read and sign a safety contract will not be allowed to participate in the laboratory and will not be able to pass or receive credit for the course. The safety contract is embedded in the 'Safety Agreement Quiz'.

Students will be evaluated on the basis of lab handout completion, laboratory handout performance, exams, quizzes, and discussions. Two 50 point multiple-choice exams will be given along with a practical exam (50 points). The written exams will be administered by the high school instructor or their designee. For the practical exam, arrangements must be made with the university instructor for completion; your high school instructor will make these arrangements. Five quizzes will be given at the beginning of some laboratory periods during the semester and the highest four scores will contribute towards the semester grade. Graded lab discussions will consist primarily of your reflections about the lab.

Grading Scale:

Your course letter grade will be guaranteed (assuming satisfactory attendance) using the percent criteria listed below. The attendance policy is discussed in detail in that section of the syllabus, but in **no case** will a student pass the course with more than two unexcused absences.

Satisfactory completion of experiments and 90 – 100 % of total points = A

Satisfactory completion of experiments and 80 – 89 % of total points = B

Satisfactory completion of experiments and 70 – 79 % of total points = C

Satisfactory completion of experiments and 60 – 69 % of total points = D

Instructional Methods and Techniques:

All of the laboratories can be done using a computer. It is best if you use your Northwest laptop and Microsoft Office. Some simulations require Java; make sure you have an updated version of Java on your computer.

Course Outline/Major Topics Studied:

| Lab | Experiment: | Quiz: |
|-----|---|---------------------------------------|
| 1 | Introduction, Safety, Laboratory Techniques | Quiz #1 – Safety Agreement |
| 2 | Density Investigation | Quiz #2 – Density |
| 3 | Introduction to Excel | Quiz #3 – Excel |
| 3.5 | Isotopes and Atomic Mass | Quiz #4 – Isotopes |
| 4 | Sandwich Stoichiometry | Quiz #5 – Stoichiometry |
| 4.5 | pH Scales | Quiz #6 – pH Scales |
| 5 | Beer's Law | Quiz #7 – Beer's Law |
| 6 | Gas Properties | Quiz #8 – Gas Properties |
| 7 | Models of the Hydrogen Atom | Quiz #9 – Models of the Hydrogen Atom |
| 8 | VSEPR Structures | Quiz #10 – VSEPR Structures |

Disclaimer: Course schedule is subject to change and you will be responsible for abiding by any such changes. Your instructor will notify you of any changes.

Attendance Policy:

Since this laboratory is virtual, attendance will be determined by the completion of the laboratory documents. Students are expected to complete all laboratory documents. Failure to turn in two documents will result in a grade level deduction. Three missed documents will result in a grade of "F" for the course.

It is the responsibility of the student to promptly notify his or her instructor when unable to turn in a document on time. Please refer to the university policy on attendance at

<https://www.nwmissouri.edu/policies/academics/Attendance.pdf>

Administrative Drop:

An instructor may administratively drop a student from the course if the student has not met the prerequisite for the course as stated in the catalog or if the student failed to attend/log in to class without notifying the instructor.

Code of Academic Integrity Policy:

The students, faculty, and staff at Northwest endeavor to sustain an environment that values honesty in academic work, that acknowledges the authorized aid provided by and intellectual contributions of others, and that enables equitable student evaluation.

Sustaining academic integrity at Northwest is the responsibility of the entire university community. The value of the educational experience, the reputation of Northwest's courses of study and degrees, and the university's mission of ensuring student success—each of these depends on diffuse academic integrity.

Students bear the responsibility of performing with academic integrity in all academic situations. Students should be especially attentive to academic integrity whenever submitting academic work for evaluation, honors, or publication.

Students are responsible for understanding the eight areas of academic behavior which violate the Code of Academic Integrity: (1) knowingly obtaining unauthorized aid or information; (2) knowingly giving unauthorized aid or information; (3) committing plagiarism from written, electronic, or internet sources; (4) misrepresenting facts or data; (5) offering bribes; (6) using library resources unethically; (7) using computer resources unethically; and (8) knowingly assisting in any of the above practices.

Please refer to Northwest Missouri State University's Academic Honesty Policy at <http://nwmissouri.smartcatalogiq.com/en/2017-2018/Undergraduate-Catalog/Policies-and-Regulations/Academic-Policies/Academic-Honesty>.

University Communications:

Students are required to use their Northwest student email account for any correspondence within the university. Students are also highly advised to check their email and CatPAWS accounts on a regular basis.

Learning or Living Accommodations Request Process: Northwest Missouri State University complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 [ADA] and the ADA Amendments Act of 2008 [ADAAA]. If a student has a documented disability that qualifies under the ADA/ADAAA and requests accommodations, they should review the Accessibility and Accommodations webpage at <https://www.nwmissouri.edu/titleixequity/accessibility/index.htm> for guidance, including the accommodations application and supporting documentation requirements. Contact ada@nwmissouri.edu or 660.562.1873 for further assistance. For the university policy on disability accommodation refer to <http://www.nwmissouri.edu/policies/student/Disability-Accommodation.pdf>

Non-Discrimination and Anti-Harassment Policy

Northwest Missouri State University (the "University") is committed to maintaining an environment for all faculty, staff, students, and third parties that is free of illegal discrimination and harassment. In keeping with that policy, the University prohibits discrimination and harassment by or against any faculty, staff member, student, applicant for admissions or employment, customer, third-party supplier or any other person (collectively the "University Community") because of their race, color, religion, national origin, sex, sexual orientation, gender identity, pregnancy, ancestry, age, disability, genetic information, veteran status, or any other legally-protected class (collectively "protected statuses").

Please refer to the following link to view the Non-Discrimination and Anti-Harassment Policy <http://www.nwmissouri.edu/diversity/titlevi.htm>

Family Educational Rights and Privacy Act (FERPA) Policy

The Family Educational Rights and Privacy Act of 1974, as amended (commonly known as the Buckley Amendment), is a federal law which provides that colleges and universities will maintain the confidentiality of student education records. Basically, the law says that no one outside the institution shall have access to your education records nor will the institution disclose any information from those records without your written consent. Northwest Missouri State University complies with FERPA, which also gives you certain rights with respect to your education records.

Please refer to the following link to view the Family Educational Rights and Privacy Act (FERPA) Policy: <http://www.nwmissouri.edu/policies/academics/Family-Educational-Rights-and-Privacy-Act.pdf>

COVID-19 Classroom Mitigation: Northwest is committed to the health and safety of the University community and has therefore adopted COVID-19 mitigation policies. Every student must wear a face covering (such as a cloth facemask, bandana, scarf, neck gaiter, or medical mask) over their nose and mouth at all times in all academic building spaces, including classrooms (unless directed not to by the instructor), offices, hallways, and restrooms. Face shields may be worn in addition to, but not in place of, a face covering. Students without face coverings will not be allowed in the classroom until they comply with expectations. Students must also follow directions regarding entries, exits and furniture, and maintain at least 6 feet of social distancing whenever possible. Northwest further asks all students to practice good

hygiene and not enter academic buildings or attend face-to-face classes when they feel sick or have been instructed to quarantine/isolate; students who miss class should communicate with their instructors. Students who do not comply with these requirements will be subject to standard disciplinary procedures according to the Northwest Student Code of Conduct (i.e. verbal and written warnings followed by a hearing, if necessary). We thank you for doing your part to maintain our learning environment and to protect the health of fellow Bearcats.

Change in Course Delivery:

It is our goal as a University to continue all courses as planned on campus. However, due to unforeseeable impacts of COVID-19, faculty and students must be prepared to move all courses to a remote/online learning format anytime during the semester, either permanently or for a short term. The type of format (synchronous or asynchronous) will be at the discretion of each faculty member. The University and faculty will communicate with students in the event such action is deemed necessary to preserve the health and safety of students and employees.