

Midland College Syllabus

2021 - 2022

CHEM 1412 L

General Inorganic Chemistry II Lab

4 Semester Credit Hours

(3 Lecture/4 Lab)

Core Curriculum Course

Instructor Information:

Instructor: [Click here to enter text.](#)

Phone: [Click here to enter text.](#)

Office Hours: [Click here to enter text.](#)

Office: [Click here to enter text.](#)

Email: [Click here to enter text.](#)

Notice: Students MUST actively participate by completing an academic assignment required by the instructor by the official census date. Students who do not actively participate in an academically-related activity may be reported as never attended and dropped from the course.

Course Description:

Basic laboratory experiments supporting theoretical principles presented in lecture; introduction of the scientific method, experimental design, chemical instrumentation, data collection and analysis, and preparation of laboratory reports. Pre-requisite CHEM 1411.

Core Objectives:

This course fulfills four hours of the Life and Physical Science requirement in the Midland College **Core Curriculum**. The Core Curriculum is a set of courses that provide students with a foundation of knowledge, skills and educational experiences that are essential for all learning. Please visit the [Midland College Catalog](#) for any questions about the Core. As part of the core, this course addresses the following four objectives:

Critical thinking skills – Students will demonstrate critical thinking skills by using appropriate calculations, analyzing experimental data, developing conclusions based upon trends in the data in course assignments, instructor created proctored exams, a departmental final exam, and in the execution of laboratory experiments/reports.

Communication skills – Students will conduct a research experiment and submit an original written report on water hardness in the Permian Basin area (no Lab Manual template provided) that will include experiment title, an abstract, experimental protocols, results (data), and conclusions (interpretation(s) of the data). The written reports will be required for the EDTA / water hardness titration experiment. (see lab book) The report will be graded on legibility, order, and comprehension of the reader and the quality of the data and calculations.

Empirical and Quantitative skills – Students will demonstrate empirical and quantitative skills by analyzing real-world applications of mass measurement, volume measurement, concentration assessment, stoichiometry, titrations, paper chromatography, spectrophotometry, through course assignments, instructor created proctored exams, and a departmental final exam.

Teamwork – Students will work in groups of two or more to conduct laboratory experiments. Students will be graded on the quality of their data acquired together in addition to their individual conclusions.

Text, References and Supplies:

- MC Chem. Dept.; General Inorganic Chemistry Laboratory Manual (2017 Ed.); Cengage; 2017. ISBN: 9781337443203
- Scientific Calculator.

Student Learning Outcomes:

Upon successful completion of this course, students will:

1. Use basic apparatus and apply experimental methodologies used in the chemistry laboratory.
2. Demonstrate safe and proper handling of laboratory equipment and chemicals.
3. Conduct basic laboratory experiments with proper laboratory techniques.
4. Make careful and accurate experimental observations.
5. Relate physical observations and measurements to theoretical principles.
6. Interpret laboratory results and experimental data, and reach logical conclusions.
7. Record experimental work completely and accurately in laboratory notebooks and communicate experimental results clearly in written reports.
8. Design fundamental experiments involving principles of chemistry and chemical instrumentation.
9. Identify appropriate sources of information for conducting laboratory experiments involving principles of chemistry.

Student Contributions, Responsibilities and Class Policies:

Students will be expected to comply with the policies outlined in the Midland College student handbook. Instructor policies concerning attendance and academic behavior are consistent with the policies in the student handbook.

Attendance Policy:

It is the responsibility of the students to know the policies and procedures associated with absences. These policies are set by instructors. Excused absences may include, but are not limited to, illness, severe weather, and death in the family. Instructors will determine whether or not an absence is excused. Please visit the [Midland College Catalog](#)

Withdrawal Policy:

Students who have enrolled in a Texas public institution of higher education as a first-time freshman in fall 2007 or later are permitted to drop no more than six courses during the entire undergraduate career. This limit includes all transfer work taken at a Texas institution of higher education and to second baccalaureate degrees. This statute

was enacted by the State of Texas in spring 2007 (Texas Education Code 51.907). Any course that a student drops after Census Day is counted toward the six-course limit if "(1) the student was able to drop the course without receiving a grade or incurring an academic penalty; (2) the student's transcript indicates or will indicate that the student was enrolled in the course; and (3) the student is not dropping the course in order to withdraw from the institution." Please visit the [Midland College Catalog](#)

Scholastic Dishonesty:

Midland College does not tolerate scholastic dishonesty or academic misconduct in any form. Please read the MC Student Handbook on this subject. Please visit the [Midland College Catalog](#)

Safety:

In addition to the above supplies, students are responsible for the following safety equipment:

1. Close-toed shoes.
2. Sleeved shirt that covers midriff (or lab coat).
3. Pants.
4. ACS regulation safety goggles (Contacts are STRONGLY DISCOURAGED).

If any one of these items is not present, the student will not be allowed to participate in the experiment.

Also, the following guidelines are to be followed at all times:

1. No open food or drink containers.
2. Safety equipment stays in place from the start of an experiment until the last person has finished the experiment.
3. No horseplay.

Gross violation of safety conduct that severely jeopardizes the health and well-being of any individuals will result in an automatic failure of the laboratory course.

Evaluation of Student:

Lab report = 60 – 100%
Lecture Exam = 0 – 40%

A lab average will be calculated based on your lab reports and/or lab exams. The laboratory is valued as 25% of the overall grade in Chemistry 1412. Two lab report grades will be dropped. There are no make-up labs this semester. If for some reason, you must miss an experiment, a zero will be assigned and will count as one of your dropped grades. If you miss two experiments, both zeros will be dropped, but the rest of your grades will count in your average. If three or more are missed, two will be dropped and the others will count as "zeros" in your average. It is to your advantage to show up to all of the labs (if possible) as this allows your lowest grades to be dropped. Two lab report grades will be dropped.

Students are expected to attend laboratory class regularly and participate in the laboratory exercise. Excessive absences are discouraged due to the nature of the

course. Attendance will be assessed each lab day. Assignments are due the following week at the beginning of class.

Course Schedule:

This class meets for 3 lecture hours per week and 3 laboratory hours per week. For a tentative schedule of the class meetings and laboratory meetings, please refer to the schedule distributed to each student. (See Instructor Handout).

Non-Discrimination Statement

Midland College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following individual has been designated to handle inquiries regarding the non-discrimination policies:

Tana Baker

Title IX Coordinator/Compliance Officer
3600 N. Garfield, SSC 131
Midland, Texas 79705
(432) 685-4781
tbaker@midland.edu

For further information on notice of non-discrimination, visit the ED.gov Office of Civil Rights website, or call 1 (800) 421-3481.

Americans with Disabilities Act (ADA) Statement:

Midland College provides services for students with disabilities through Student Services. In order to receive accommodations, students must visit www.midland.edu/accommodation and complete the Application for Accommodation Services located under the Apply for Accommodations tab. Services or accommodations are not automatic, each student must apply and be approved to receive them. All documentation submitted will be reviewed and a "Notice of Accommodations" letter will be sent to instructors outlining any reasonable accommodations.

Math & Science Division Information:

Division Office: AHSF 124 (432) 685-4561
Division E-Mail: mns@midland.edu

Department Chair: Mr. John Anderson (432) 685-6737
Dean: Dr. Miranda Poage
Secretary: Sarah Anderson
Clerk: Liliana Orcutt

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