

Dakota College at Bottineau Course Syllabus

Course Prefix/Number/Title: CHEM 121

Number of Credits: 4 semester hours

Course Description: This class will provide students with a foundation in chemical concepts and principles. This course consists of three one hour lectures and one two hour lab each week.

Course Objectives: General Chemistry I is designed to provide a firm foundation in chemical concepts and principles so that students will develop an appreciation of the vital role that chemistry plays in their everyday lives.

1. Students will gain a fundamental understanding of the nature of atoms, ions, and molecules.
2. Students will gain a detailed understanding of the quantitative relationships governing chemical reactions, including the ability to perform a variety of stoichiometry calculations.
3. Students will gain a fundamental understanding of Scientific methods and its applications to chemistry.
4. Students will gain an understanding of elementary thermochemistry
5. Students will gain an elementary understanding of electronic structure of atoms.
6. Students will gain an understanding of chemical bonding, including knowledge of different types of bonding, predictions of molecular geometry from VSEPR theory, and hybridization.
7. Students will be able to identify fundamental reaction types, especially acid base, precipitation, and oxidation reduction, as well as descriptive chemistry of simple inorganic ions and molecules.

Instructor: Angie Bartholomay

Office: NSC 111

Office hours: MW 9-10:00am

Phone number: 228-5471

Email: angela.bartholomay@dakotacollege.edu

Lecture Schedule: 10:00 -11:50am MWF NSC 124

Lab Schedule: T10:00-10:50am & 8:00-9:50am Thursday NSC 120

Textbook: Chemistry 10th Edition by Raymond Chang

Student Email Policy:

Dakota College at Bottineau is increasingly dependent upon email as an official form of communication. A student's campus-assigned email address will be the only one recognized by the campus for official mailings. The liability for missing or not acting upon important information conveyed via campus email rests with the student.

Course Requirements:

Exams, quizzes, lab reports, and research paper will be used to determine the final grade. Any grievances about graded materials must be addressed within one week from the time the material is returned to the student.

Exams: There will be five regular exams. Exams may contain short answer, multiple choice,

completion and problems. Periodic tables and calculators may be used on the test.

Homework: Throughout the semester problems will be assigned in order for you to better comprehend the concepts and math involved. This homework will not be graded, however you will be able to use these assignments on quizzes. The problems assigned will be similar to those which will be on the exams. Whenever possible we will discuss the problems in class or you can see one of the chemistry tutors or myself for help.

Quizzes: will be used to check for understanding, there will be no make-up quizzes.

Laboratory: The laboratory portion of the course provides an opportunity to integrate lecture concepts with observable activities and is critical to understanding chemical concepts. Safety goggles are available for purchase in the bookstore. Attendance in lab is mandatory and the instructor must validate that you actually assisted in the collection of data. Borrowed results are not acceptable and all parties involved will receive a grade deduction. Lab reports are due at the end of the lab period. Late lab reports will not be accepted. Failure to wear safety goggles, not following instructions or using unsafe procedures is unacceptable and may result in your dismissal from further labs.

Grades will be based on total points using the following grading scale:

A= 90-100%	Exams (5)	100 points each	500 points
B= 80-89.5%	Lab reports (15)	15 points each	225 points
C= 70-79.5%	Final Lab Project	100 points	100 points
D=60-69.5%	Quizzes (10)	10 points each	100 points
F= <59.5%	Final Exam	100 points	100 points
	Total points		1025 points

<u>Tentative Course Outline & Reading</u>	<u>topic</u>	<u>lab schedule</u>
Week 1	Chapter #1	intro to chemistry & scientific method
Week 2	Chapter #2	atoms, molecules & ions
Week 3	Chapter #2	nomenclature
	Exam #1- Chapters #1-2	
Week 4	Chapter #3	mass relationships
Week 5	Chapter #4	aqueous solution reactions
Week 6	Chapter #4	acid base titrations
Week 7	Exam #2- Chapters #3-4	
	Chapter #5	gases
Week 8	Chapter #5 & 6	thermochemistry
Week 9	Chapter #6	thermochemistry
	Exam #3 Chapter rates of reactions #5-6	
Week 10	Chapter #7	Quantum Theory
Week 11	Chapter #7 & 8	
Week 12	Chapter #8	periodic relationships
Week 13	Exam #4 -Chapter #7-8	

Week 14	Chapter #9	Chemical Bonding	VSPER Model
Week 15	Chapter #10	molecular geometry	
Week 16	Chapter #11	Intermolecular forces	
	Final Review		
	Final Exam		

General Education Goals & Objectives

This course meets General Education Goals:

1. Applies the scientific methods of inquiry.
2. Demonstrates an understanding of the natural environment.
3. Apply scientific information and principles to everyday life.

Relationship to Campus Theme:

This course addresses the campus theme by incorporating the role chemistry plays in our everyday life and the impact it has on our natural world. In addition, students will use technology to conduct labs as well as study how technology can be used in chemistry. The course will address the role of chemistry in their everyday life as well as in the future.

Classroom Policies:

- 1) The use of Cell phones and electronic devices using headphones are prohibited in the classroom at all times. Cell phones need to be on silent and placed on the table in front of you.
- 2) **There will be no makeup exams unless prior arrangements have been made. If you need to be gone for a school related activity or family event, you will be expected to make arrangements prior to the event and take the exam before you leave. If permission is granted for a make-up, you will be given 48 hours to take the exam.**
- 3) Food and beverages are permitted in accordance with IVN classroom policy.
- 4) Be respectful of other students, technicians, instructors, and guests.
- 5) Early Warning Attendance policy will be followed!

Academic Integrity: All students are expected to adhere to the highest standards of academic integrity. Dishonesty in the classroom or laboratory with assignments, quizzes, and exams will not be tolerated.

Disabilities and Special Needs: If you have a disability for which you require accommodations, you are encouraged to contact:

Jacalyn Migler 228-5672 jacalyn.migler@dakotacollege.edu

to request disability support services as early as possible during the beginning of the semester.