

SYLLABUS

CH 311 Analytical Chemistry (Quantitative Analysis)

Instructor: Dr. W C. Mahone Class Meeting Location/Time: M W,F 3:50-5:05 p.m.

Lab. R 03:50-06:20p.m. Phone: 254-3740 E-mail: Wmahone@mvsu.edu

Office Location: FLW 214

Office Hours: MW, 9:00-10:00 & 02:00 to 03:00, T 1:00 to 4:00pm F 9:00-10:00 & 2:00-4:00

COURSE DESCRIPTION

Analytical Chemistry I is designed to develop a strong skill set for **quantitative analysis**. This course includes **stoichiometric calculations**, study of statistical data analysis, standardization of data, solutions and their properties, properties of solution, acids and bases, electrochemistry, chemistry of metals and nonmetallic elements.

PREREQUISITES

CH 111,112

PURPOSE

The primary purpose of this course is to teach students to analyze substances for the presence of inorganic analytes what is termed wet chemistry techniques. A secondary purpose is to complete a student's indoctrination into the principles of general chemistry, and particularly stoichiometric calculations. In doing so, CH 311 develops the skills and scientific background required of teachers of students in public schools, as well skills required in a variety of career areas from medical and pharmacy to dentistry and engineering.

Student Learning Outcomes

The following general course goals are established to meet the purposes of CH 311:

1. Understanding of basic terms and processes of sampling and analysis.
2. Understanding of basic statistical functions and how to apply them.
3. How to perform an error analysis to determine how accurate data is.
4. Develop factual report writing skills.
5. Become efficient in the performance of stoichiometric calculations.
6. Increase one's proficiency in General Chemistry Concepts.
7. Provide model exercises and demonstrations that enhance the understanding of natural principles and illustrate safe laboratory techniques and practices.
8. Clarify the significance of replicated, standards or controls, measurements, data reduction and presentation analysis, and accuracy in reporting of the scientific activities.
9. How to analyze data and make conclusions based on data.

CONTENT

Textbook

Analytical Chemistry by G.D. Christian, 7th Edition or latest ed.

Laboratory Experiments

(1) Density and Measurements, (2) Acid Base Titration I,(strong acid strong base) (3) Acid Base titration II(weak acid strong base) (4)Analysis of an known chloride , (5) Redox Titration, (6) Complex Titration. .

USE OF TECHNOLOGY

Becoming a holistic transformer is facilitated by the use of technology. Therefore, the use of technology in various forms will be encouraged in preparing for classroom discussion, scientific inquiry, practical application exercises, and lesson-plan development. Such technology will include, though not be limited to

1. Computerized library searches for information using scientific and educational databases
2. Use of internet to perform in depth searches for information related to appropriate instructional methodology and materials for teaching students in science; and
3. Computer applications useful in instruction and in scientific applications (e.g., simulations, data and word processing).

EVALUATION AND GRADING PROCEDURES

Grading Components

Class Tests	45% points
Mid-semester Exam.	5% points
Final Exam.	15% points
Laboratory grading	15% points
Quizzes/Group Tests	15% points
Home Work	5% points

Grading Scale	A	90-100%
	B	80-89%
	C	60-79%
	D	50-59%
	F	<50%

Special Policies:

Attendance : 1 letter grade for every three unexcused absences.

Tardiness: 1 letter grade for every four tardies.

Cell Phones: To be turned **off** at all times during class. If phone goes off during a test, student may be asked to leave the classroom with no possibility to make up work. Any student who leaves the room to answer a cell will be asked not to return to class.

Un-signed Work: Any work turned in but not signed will receive a zero with no makeup possibility.

Classroom behavior: Negative classroom behavior will not be tolerated and can result in student being asked to leave the class.

Excessive Restroom breaks: Loss of Bonus points

Leaving class early without prior notification of instructor: Count as absence

Restroom break during test: Take up test and give makeup.

Copying: Automatic "F" for the semester

STUDENTS WITH SPECIAL NEEDS

Students having any special needs (i.e., disabilities, problems, or any factors that may affect their performance in class) or requiring special instructional strategies should make these special needs known to the instructor during the first week of the course. The instructor will meet with the student to insure access to resources in the University and make appropriate instructional modifications as required.