Warren County Community College

CHE 110 Introductory Chemistry
Course Master Syllabus

Course Information

Catalog Description: Through an emphasis on chemical calculations and problem solving involving the metric system, conversion factors, and chemical reactions, this course provides an introduction to the fundamental laws and theories of chemistry. It includes the study of atomic structure, chemical bonding, use of the periodic table, solutions, introductory organic chemistry, and biochemistry. This course is recommended for allied health and non-science major students.

Prerequisite(s): Students are expected to have basic math knowledge

Corequisite(s): MAT 131 – College Algebra

Credits: 4

Hours: 3 lecture and 3 lab

Required Text(s):

- OWLv2 with eBook for Zumdahl/DeCoste's Introductory Chemistry: A Foundation
- eBook: Introduction to Chemical Principles: A Laboratory Approach

Supplemental Materials:

Instructor Information

Instructor's Name:

Contact Information:

Office Hours:

Program Goals

1. Apply the scientific method in experimentation and data analysis.
2. Analyze complex scientific problems, perform calculations, and evaluate solutions.

3. Communicate scientific information clearly through both oral and written communication.
4. Critically analyze problems through gathering data from multiple sources and apply findings to new scenarios.
5. Describe fundamental biological, chemical, and physical principles, including, but not limited to, molecular and cellular functions, anatomy and physiological function, inheritance, and both organic and inorganic chemical reactions.
6. Interpret results from experimentation that utilizes modern laboratory techniques and instrumentation.

Class Core Competencies

The following core competencies are embedded in this curriculum:

- Communicate effectively in both speech and writing
- Apply appropriate mathematical and statistical concepts and operations to interpret data to solve problems
- Use scientific method of inquiry, through the acquisition of scientific knowledge
- Use computer systems or other appropriate forms of technology to achieve educational and personal goals
- Address an information need by locating, evaluating, and effectively using information.

Class Learning Assessment

Student Learning Outcomes	Suggested Means of Assessment
Apply problem-solving and critical thinking to solve chemical problems, perform calculations, and conversions	Exams, quizzes homework, hands-on laboratory activities, and laboratory reports
Use the periodic table to determine atomic structure of the elements, classify the elements, and compare the physical and chemical properties of the elements	Exams, quizzes homework, hands-on laboratory activities, and laboratory reports
Differentiate between the characteristics and properties of the different states of matter	Exams, quizzes homework, hands-on laboratory activities, and laboratory reports

Student Learning Outcomes	Suggested Means of Assessment
Understand, identify, and categorize the different types of chemical reactions and perform related calculations and conversions	Exams, quizzes homework, hands-on laboratory activities, and laboratory reports
Differentiate between the physical and chemical properties of inorganic, organic, and biochemical compounds	Exams, quizzes homework, hands-on laboratory activities, and laboratory reports
Demonstrate effective oral and written communication skills	Homework, hands-on laboratory activities, and laboratory reports
Conduct basic research and literature searches through the use of the library, internet, and other resources	Homework and laboratory reports
Use the scientific method to conduct laboratory experiments	Homework, hands-on laboratory activities, and laboratory reports

Grading System

Letter Grade	Percentage Range
A	90 to 100 percent
B Plus (B+)	87 to 89.9 percent
B	80 to 86.9 percent
C Plus (C+)	77 to 79.9 percent
C	70 to 76.9 percent
D	60 to 69.9 percent
F	Below 60 percent

College Information

Disability Services
Disability Services Webpage

Statement and Policy on Cheating, Plagiarism, and Academic Conduct
Academic Conduct Policy (Policy 304) [PDF]

Students are required to perform all the work specified by the instructor and are responsible for the content and integrity of all academic work submitted. A violation of academic integrity will occur if a student: (1) knowingly represents work of others as

one's own, (2) uses or obtains unauthorized assistance in any academic work, (3) gives fraudulent assistance to another student, or (4) furnishes false information or other misuse of college documents.

Unauthorized use of Artificial Intelligence (AI) is prohibited unless the instructor explicitly permits it in the syllabus or assignments. If tools such as ChatGPT are permitted by an instructor to be used for an assignment, they should be used with caution and with proper citation. In all such cases, you may only use the specific tools identified as acceptable and you must adhere to the College's standards for attribution, validation, and transparency.

In cases of suspected violation of academic integrity, the incident is to be reported to the Office of Academics. A student found guilty of violating the rule of academic integrity by the Vice President of Academics will be considered to have failed in personal obligation to the College; such failure will be subject to disciplinary action by the College. Unless otherwise notified, the instructor will allow students who are pending disciplinary action to attend class.

Tutoring and Testing at the Instructional Support Center (ISC)

- Instructional Support Center (ISC) Webpage

WCCC Library Services

- WCCC Library Website

Citation Styles and Formatting

Work submitted for any Warren County Community College course must conform to the required formatting and citation style that are specified by the instructor. The Library and Instructional Support Center can assist students with formatting and citations for assignments and papers.

WCCC Attendance Expectations

The College expects students to attend and participate in all classes. This involves sharing discussions and lectures in class, as well as interacting with other students. Grades are based on the quality of work students complete in meeting the requirements for a particular course, as stated in the course syllabus and catalog description. Attendance, among other factors, may be an additional criterion for assigning grades. Students should realize that they are responsible for all class meetings and that work missed because of absences may affect their grades. Attendance in online classes is

determined by the completion of assignments/ tests. Students who have not completed any assignments or tests will be considered non-attending and receive an NF grade in online classes.

Class Attendance Expectations

Topical Outline

- Identification and properties of matter, energy, sig. figures measurements, and calculations
- Matter, energy, measurements, calculations, identification of chemical and physical changes
- Introduction to the periodic table. Elements, atoms, molecules, compounds, and classification of chemical and physical properties of the elements and compounds
- Identification, classification, and balancing of chemical reactions/equations
- Gases, liquids, solids, Boyle's Law, Charles' Law, Ideal Gas Law, Graham's Law of diffusion
- Preparation and calculations involving solutions
- Chemical kinetics and rates of reaction and chemical equilibrium
- Identification and classification of acids and bases, acid-base reactions, and buffers
- Nuclear chemistry
- Introduction to organic chemistry. Identification and classification of the chemical and physical nature of functional groups
- Introduction to biochemistry. Study of lipids, proteins, and carbohydrates

Grading Methods

Assignment	Points/Percentage

Assignment	Points/Percentage

Class Itinerary

Week / Unit	Topic	Readings/Assignments