



SEMESTER
Life and Natural Sciences Department
School of Science, Technology, Engineering, and Mathematics

Program Name: Chemistry
Course Name: Principles of Chemistry – Laboratory
Course Number: CHM095 **Section:** BXX
Meeting Day(s) & Time(s):
Credits: 4 (combined lecture and lab)
Contact Hours: 3
Text: *Principles of Chemistry Laboratory Manual 10th Edition,*
Owens Community College, 2014.
Instructor Name:
Office Location:
Office Hours:
Owens CC Email:**
Phone:
Additional Contact:

CATALOG DESCRIPTION: Covers properties of matter, measurement, the atom, covalent and ionic compounds, structures of carbon compounds, chemical reactions, stoichiometry, the mole concept, oxidation-reductions, solutions, acids and bases, radiation and nuclear chemistry. Laboratory work promotes the understanding of basic principles and emphasizes use of the system. Students retaking this course must repeat both the lab and lecture. This course DOES NOT count towards graduation.

COREQUISITES: None

PREREQUISITES: MTH091 or equivalent

TEXTBOOKS and MATERIALS:

- *Principles of Chemistry Laboratory Manual, 10th Edition*, Owens Community College, 2014.

- *Introductory Chemistry with Mastering Chemistry, 7th Edition*; Tro, Nivaldo; Pearson Publishing, 2023.
- Scientific calculator

*Your **print book, e-book, or access code** required for class can be accessed through the Owens Community College e-Campus Bookstore by accessing the online link, called “Find Books” on the course schedule for each course section.*

GENERAL INFORMATION

Course Objectives

By completing this course, the student should be able to:

- demonstrate a working knowledge of the metric system.
- learn definitions of chemical terms
- learn concept of significant figures.
- relate atomic structure to properties of matter.
- predict types of bonding elements from their positions in the periodic table.
- determine bonding from electron structure
- determine electron configurations of elements and ions.
- name and write formulas of simple inorganic compounds.
- balance chemical equations.
- write chemical equations
- identify the substance being oxidized or reduced in a redox reaction.
- determine mass relationships in chemical reactions.
- calculate solution concentrations.
- learn to determine molarity and percent mass of a solution
- describe the important properties of acids, bases, and salts.
- complete acid-base calculations
- basic overview of organic chemistry.
- draw correct structures for simple organic compounds.
- explain nuclear reactions in terms of the subatomic particles involved.

Laboratory Objectives

This laboratory is associated with the lecture portion of CHM095. Student should be able to demonstrate comprehension of: the metric system, types of bonding, chemical formulas, solution concentrations, properties of acids and bases, structures of simple organic compounds, arrangement of the periodic table, types of chemical reactions and the application of formulas used in various chemical equations and reactions.

Laboratory Student Learning Outcomes:

***Please refer to lecture syllabus for all learning outcomes and competencies**

COURSE RULES

Attendance

Attendance is taken at each laboratory session. If you are more than 30 minutes late for a laboratory you will not be permitted to attend that session. During the first 30 minutes your instructor covers the basic information necessary to successfully complete the laboratory, mandatory safety issues, precautions, and location of needed materials. After the session has begun, for safety purposes, your instructor needs to be working with all students, not covering the information for those students who are late. Therefore, if you are more than 30 minutes late, you will not be permitted to attend the laboratory and will be counted absent. You are encouraged to obtain missed information from other students in the laboratory. You will not be permitted to submit laboratory assignments for sessions in which you have been counted absent.

To achieve success in this course, laboratory attendance is critically important. It is necessary to be present in order to get direct attention from the instructor on course material. Students cannot learn the laboratory material without this practical experience, and the practical experience will be a large portion of the laboratory exams. Student attendance in the laboratory is also vital for accreditation and registry exams for all the technologies.

- You must be registered for the laboratory section that you are attending. Non-registered persons are not permitted in the laboratory.
- There are no make-up laboratory sessions.
- You will not receive any points for any of the work from a missed laboratory session.

Safety

- **Eating, drinking and smoking are not permitted in the laboratory.**
- You must be registered for the laboratory section which you are attending. Non-registered persons are not permitted in the laboratory.
- Appropriate apparel is required in the laboratory at all times, including; cotton shirts, jeans, proper foot covering, proper shoes, etc.
- Loose clothing, shorts, sandals, open-toed shoes are not permitted.
- Full covering laboratory aprons are available as needed.
- More about apparel will be discussed at the first laboratory meeting.
- **Safety goggles MUST BE WORN while experiments are being conducted. The laboratory instructor will announce when goggles may be removed. The appropriate eyewear must be splash goggles, which are provided to each student. NO impact glasses are to be worn at any time.**

Student Responsibilities

- Read the laboratory assignment and appropriate lecture material prior to each laboratory session. It is recommended that a laboratory notebook be kept to record observations, experimental results, and instructor notes.
- Be on time and use the full laboratory period.
- Turn in all work as assigned, ask questions, and participate in each activity.

- **CLEAN UP:** Be certain that your area of the laboratory table is properly cleaned after use. Wash and return all glassware and other instruments to the proper areas. Check the sink to be sure that it is clear of all glassware and trash.

GRADING

The laboratory grade will be based on assignments and exams.

6 Reports (10 points each)	60 points
6 Question sets (10 points each)	60 points
Exam 1	65 points
Exam 2	65 points
Total	250 points

IMPORTANT: You must earn no less than 150 points (60%) out of the 250 total possible laboratory points to pass the entire course. If you do not earn at least 150 laboratory points, you will receive an (F) letter grade for the entire course.

There is NO provision for EXTRA CREDIT to be given beyond the designated points for each laboratory exam and activity.

Assignments – Reports and Question Sets

A report or question set will be specifically assigned for each Activity. See the attached weekly schedule. Each report will be graded on a 10-point scale. It will be written based on the format guide that can be found in the laboratory manual. Each question set will be graded on a 10-point scale and **MUST** be turned in at the end of class.

Assignments are due when indicated by the instructor. Late assignments will receive a 10% grade deduction for each day late. Any assignment over 1 week late will receive a zero (0%) grade. Laboratory assignments will not be accepted at the Life and Natural Sciences Department offices.

You will not be permitted to submit or to receive credit for a laboratory assignment in a session in which you have been counted absent.

Exams

Exams 1 and 2 will each consist of 25 questions and 65 points per exam. The exam questions will be comprised of material covered in the laboratory manual, experiments, and laboratory lectures. Exams will include the following types of questions: multiple-choice, practical application, fill-in the blank, calculations, and short essay.

- Exam 1 will cover activities 1 to 6 or 7.
- Exam 2 will include material from the remaining activities.

Open book and open notes are not permitted for an exam.

During exams, unauthorized use of a phone, tablet, e-watch or any other electronic device is prohibited. Use of these devices during an exam, could result in forfeiture of exam points.

Each exam can only be taken once.

Contact your instructor immediately if you miss a scheduled exam.

A student missing an exam chooses one of the following options:

- Take a **DIFFERENTLY FORMATTED** makeup exam on date assigned by instructor.
- Not take the exam and receive 0 points.

A student missing Exam 1 has one week from date of the missed exam to make up the exam.

A student missing Exam 2 has two days from date of the missed exam to make up the exam.

No assignments will be accepted at the Toledo Campus Life and Natural Sciences Department office

- There are NO make-up laboratory sessions.
- You cannot receive points for any work from a missed laboratory session.
- All work must be each student's own effort.
- No photocopied reproductions will be accepted.

Laboratory sections do not award letter grades, only point totals. The laboratory points earned are totaled and forwarded to your lecture instructor. This point total is added to the lecture point total. The final grade for the course is determined from points earned in both lecture and laboratory. See your lecture syllabus for the course grading summary and letter grade scale.

ACTIVITIES

Either a Laboratory Report or Question Set is submitted for each Activity.

Activity 1	Laboratory Safety Orientation, <i>Question Set</i>
Activity 2	Measuring in the Metric System, <i>Question Set</i>
Activity 3	Density, <i>Report</i>
Activity 4	Percent Composition of a Mixture, <i>Report</i>
Activity 5	Identification of Ions, <i>Report</i>
Activity 6	Periodicity and Lewis Dot, <i>Question Set</i>
Activity 7	Ionic and Covalent Bonding, <i>Question Set</i> , Exam 1
Activity 8	Percent Composition of a Compound, <i>Report</i>
Activity 9	Single Replacement Reactions, <i>Report</i>
Activity 10	Molarity and Percent Mass of a Solution, <i>Question Set</i>
Activity 11	Titration, <i>Report</i>
Activity 12	Solubility, Dissociation and pH, <i>Question Set</i>
Activity 13	Exam 2

Academic Support

Disability Services Resource Center: If you have a disability or acquire one, you may be entitled to receive reasonable accommodations intended to assure you an equal opportunity to participate in and benefit from the program. To receive more information or to register for accommodations, please contact the Disability Resource Center at 567-661-7007, email disability@owens.edu, visit <https://www.owens.edu/disability/>, or stop by College Hall 124.

Tutoring Services: Owens Community College offers academic tutoring and assistance in a variety of subjects including: accounting, computing, economics, mathematics, science, and writing. For more information go to: <https://www.owens.edu/successcenters/>.

Counseling Services: Counseling Services provides assistance to students experiencing personal, educational, interpersonal/relationship, family, social, or psychological difficulties. If you feel you may benefit from this service, please contact them at counselingservices@owens.edu. More information is at <https://www.owens.edu/counseling/>.

Campus and Community Connections: The Center for Campus and Community Connections (College Hall 151) is a walk-in office created to provide retention support through resource stability initiatives and community connections. Go here for more information: <https://www.owens.edu/connection/> or contact connections@owens.edu

Owens Library: The Owens Library offers two locations (Toledo and Findlay) as well as online resources. For more information visit <https://www.owens.edu/library/>.

Students can find more information on campus resources, student support, student life, and security at this [link](#).

General Information

Student Code of Conduct: All students are expected to follow Owens Community College's [Student Code of Conduct](#), which includes academic honesty, encompassing plagiarism. See the [Board Policy](#) for more information.

Anti-Discrimination and Harassment & Title IX/Sexual Misconduct: All students, faculty, and staff are expected to follow Owens Community College's [Anti-Discrimination and Harassment Policy](#) and the College's [Title IX Policy](#)/Sexual Misconduct Procedures and Guidelines. The College strictly prohibits and will not tolerate harassment, discrimination, intimidation, or hostile/offensive working or learning environments.

Religious Accommodations: A student seeking an accommodation for an absence permitted under Ohio's Testing Your Faith Act must provide the instructor with a written email notice with the specific dates for an absence, and must do so not later than fourteen (14) days after the first day of instruction. Alternative accommodations are not retroactive, and no academic penalty will be imposed for an absence under the policy*. The request for an alternative accommodation will be kept confidential. Students with questions about a religious accommodation under Ohio's

Testing your Faith Act may contact the College's Office of Academic Affairs: provost@owens.edu
The policy may be found on the Owens website: [3358:11-2-63 Accommodation](#) for a Student
Absence for the Observance of Religious Beliefs and Practices Policy

Document Collection: Throughout the semester, your instructors may ask for a variety of assignments including tests and/or quizzes for student learning of institutional general education competencies or program assessment. Please save all your class materials until the end of the semester.

Classroom Admittance: OCC classes shall only be attended by the officially registered OCC students or perspective students, instructor of record, guest lecturer, or substitute. Visitors are not permitted to be in the classroom and should not be invited to attend or participate in the class. See [FERPA](#) regulations for more information.

Use of AI Tools: This course requires you to complete various assignments that assess your understanding and application of the course content. You are expected to do your own work and cite any sources you use properly. You are not allowed to use any artificial intelligence (AI) tools, such as chatbots, text generators, paraphraser, summarizers, or solvers, to complete any part of your assignments. Any attempt to use these tools will be considered academic misconduct and will be dealt with according to the university's academic integrity policy. Students are expected to complete all work independently and without the assistance of AI-generated content. If you have any questions about what constitutes acceptable use of AI tools, please consult with the instructor *before* submitting your work.

SEMESTER Master Laboratory Schedule

Laboratory Schedule

Laboratory Section DAY	Laboratory Section DAY	Laboratory Section DAY
Activity 1 - DATE	Activity 1 - DATE	Activity 1 - DATE
Activity 2- DATE	Activity 2- DATE	Activity 2- DATE
Activity 3- DATE	Activity 3- DATE	Activity 3- DATE
Activity 4- DATE	Activity 4- DATE	Activity 4- DATE
Activity 5- DATE	Activity 5- DATE	Activity 5- DATE
Activity 6- DATE	Activity 6- DATE	Activity 6- DATE
Activity 7- DATE	Activity 7- DATE	Activity 7- DATE
Activity 8- DATE	Activity 8- DATE	Activity 8- DATE
Activity 9- DATE	Activity 9- DATE	Activity 9- DATE
Activity 10- DATE	Activity 10- DATE	Activity 10- DATE
Activity 11- DATE	Activity 11- DATE	Activity 11- DATE
Activity 12- DATE	Activity 12- DATE	Activity 12- DATE
Activity 13- DATE	Activity 13- DATE	Activity 13- DATE