

Updated 07/18/2023



WACO, TEXAS

COURSE SYLLABUS

AND

INSTRUCTOR PLAN

GENERAL CHEMISTRY I

CHEM 1411 SECTION 006

DR. OTSMAR VILLARROEL

NOTE: This is a 16-week course.

Course Description:

Fundamental principles of chemistry for majors in the sciences, health sciences and engineering; topics include measurements, fundamental properties of matter, states of matter, chemical reactions, chemical stoichiometry, periodicity of elemental properties, atomic structure, chemical bonding, molecular structure, solutions, properties of gases, and an introduction to thermodynamics and descriptive chemistry. Basic laboratory experiments supporting theoretical principles; introduction of scientific method, experimental design, data collection and analysis, and preparation of laboratory reports.

Prerequisites and/or Corequisites:

MATH 1314 with a minimum grade of C or passing score on non-credit equivalency exam for MATH 1314, or consent of the division chair. High school chemistry is strongly recommended. Semester Hours 4 (3 lec/3 lab)

Course Notes and Instructor Recommendations:

Make sure that your equipment meets the system requirements:

Students must already possess basic computer skills and Internet skills. Students are expected to have a reliable internet connection as well as basic computer skills, knowledge of word processing software, and a basic understanding of how to use search engines and common web browsers.

Part of the material will be presented via Brightspace. That is why you need to make sure your computer meets the system requirements.

All assignments, except homework assignments, must be submitted on Brightspace. Homework assignments must be submitted using the Connect McGraw-Hill system.

Exam assessments may require the use of Respondus Lockdown Browser.

1. Dedicate enough time to this course, make a plan:

Students must complete the assignments in their corresponding deadlines. You are responsible for all course material, including, but not limited to textbook, online videos, activities, assignments, etc.

It is helpful to review the course calendar at the beginning of each week to avoid missing any important deadlines. Waiting the very last minute on the day the assignments are due to start working on them is not a recommended strategy for success. If you have questions, there is not enough time for me to get back to you before the assignment is due. I strongly recommend that

you start working on the assignments early. If you have questions about the assignment or the material, you have adequate time to ask your questions and I will have adequate time to get back to you with answers.

Listen and take notes of instructor lectures, or/and videos posted by the instructor. Review the PowerPoint presentations provided by the instructor and read your book for further clarification before attempting the assignments or you will spend double (or more) the time completing the assignment.

2. Communicate with your instructor, ask questions:

If you need help, you need to let me know you need help.

Contact your instructor immediately if you have any general question about this course, or questions about the material that is covered. Do not wait until the day before the test of assignment deadline to ask questions.

Contact your instructor immediately if you encounter any problems (personal, technical, etc.) that prevent you from completing a class requirement by the deadline.

Check your student email, Brightspace announcements at least twice per day. It is part of your responsibility to keep up with and follow any instructions that the instructor posts in the email and announcements.

Instructor Information:

Instructor Name: Otsmar J. Villarroel

MCC E-mail: OVillarroel@mclennan.edu

Office Phone Number: 254-299-8163

Office Location: Science Building. Office 309

Office Hours: Monday, 12:45 pm – 1:50 pm. Tuesday and Thursday, 10:00 am – 11:00 am.

Fridays by appointments.

Out of the classroom and after hours, the best methods of communication in this class should be through emails. Please, email me using your MCC email as emails from other sources can be routed to my spam folder by the MCC filters.

Emails are usually responded by me within 24-36 hours during weekdays. It may or may not take longer during the weekend or holidays. If I have not responded to your email within 48 hours, please forward it to me.

Make sure you always include your name and section. In addition to it would be more effective for me to answer your question, this will help us to save time too. Always, be clear with your questions. You can always attach pictures, screenshots, etc. if you consider it will help me assist you in a more productive way.

Office hours are offered by appointments in person during the times mentioned in this syllabus. Or if time allows via zoom. Please, do your best to make the appointments at least 24 hours in advance.

You can also call the phone listed above and leave a voice message. The message will be forwarded to my email account.

Required Text & Materials:

Title: Chemistry. The Molecular Nature of Matter and Change

Author: Silberberg - Amateis

Edition: 9th Edition

Publisher: McGraw-Hill Education

ISBN: 9781264505463 (E-book, and Connect)

ISBN: 9781265947842 (E-book, Hard Copy and Connect)

McGraw Hill Connect access code. If you buy the textbook from MCC bookstore, this code is part of the package.

Handheld scientific calculator. It can be a graph calculator.

A webcam and a printer.

MCC Bookstore Website: <http://www.mclennan.edu/bookstore/>

Methods of Teaching and Learning:

The course consists of lecture and laboratory. The lecture will be a mix of power point presentations, problems worked on the whiteboard and discussion. It is vital that you read the textbook BEFORE the lecture on that chapter. This will greatly improve your understanding of the topic and therefore your grade. The course covers a LOT of material. It is important that students keep up with material and devote adequate time outside the class to study. You are responsible for the information presented in the text even if it is not covered in lecture.

Successful completion of this course will require the student be capable of algebraic manipulation of symbolic equations. It is strongly recommended that the student take adequate

lecture notes and study outside of class. Work out some of the questions at the end of each assigned chapter, without assistance, if possible. If any material is unclear to the student, it is highly recommended to consult with the instructor as soon as possible. Do not wait until the last minute to request help. If you follow the suggestions given above, you should do well. In case you still have trouble even after following these suggestions, avail yourself of the free tutorial service provided by MCC.

The laboratory portion offers hands on experience in the laboratory experimentation. The student's review of the written explanation of the lab experiment will enhance the learning experience. Students may be required to work individually or in groups. Your grade will be calculated based on your performance in the classroom (participation, exams, and quizzes), online homework, and lab performance (lab reports). See Course Grading Information for more details.

Course Objectives and/or Competencies:

Lecture

Upon successful completion of this course, students will:

1. Define the fundamental properties of matter.
2. Classify matter, compounds, and chemical reactions.
3. Determine the basic nuclear and electronic structure of atoms.
4. Identify trends in chemical and physical properties of the elements using the Periodic Table.
5. Describe the bonding in and the shape of simple molecules and ions.
6. Solve stoichiometric problems.
7. Write chemical formulas.
8. Write and balance equations.
9. Use the rules of nomenclature to name chemical compounds.
10. Define the types and characteristics of chemical reactions.
11. Use the gas laws and basics of the Kinetic Molecular Theory to solve gas problems.

12. Determine the role of energy in physical changes and chemical reactions.

13. Convert units of measure and demonstrate dimensional analysis skills.

Laboratory

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.

9. Identify appropriate sources of information for conducting laboratory experiments involving principles of chemistry.

Course Attendance/Participation Guidelines:

If a student is not in attendance in accordance with the policies/guidelines of the class as outlined in the course syllabus as of the course census date, faculty are required to drop students from their class roster prior to certifying the respective class roster. A student's financial aid will be re-evaluated accordingly and the student will only receive funding for those courses attended as of the course census date.

Before the 60% point of the semester, a student who is absent for 25% or more of a face-to-face or blended course or who misses 25% or more of assigned work for an online course will be withdrawn from the course with a grade of W. A student may also request to be withdrawn with a grade of W before the 60% point of the semester. After the 60% point of the semester, the

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student may request to be withdrawn if the student is passing, or be assigned the final grade earned at the end of the semester after grades have been updated to reflect missing work.

Students will be counted absent from class meetings missed, beginning with the first official day of classes. Students, whether present or absent, are responsible for all material presented or assigned for a course and will be held accountable for such materials in the determination of course grades. Students will be counted absent for the lecture portion if arriving to class ten (10) minutes after the official starting time of the session. Students will be counted absent for the lab portion if arriving to class five (5) minutes after the official starting time of the session and automatically will receive a grade of zero for that missing laboratory session.

Course Outline or Schedule:

Week 1 (August 21st – 25th) Orientation/ Syllabus. Chapter 1

Lab: This time will be used for lecturing. (August 22nd)

Week 2 (August 28th – September 1st) Chapter 1

Lab: This time will be used for lecturing. (August 29th)

Week 3 (September 4th – 8th) Chapter 2

Lab 1: Basic Laboratory Techniques and Accuracy of Glassware (September 5th)

Week 4 (September 11th – 15th) Chapter 2.

Lab 2: Development of Laboratory Skills and Errors in Measurements (September 12th)

Week 5 (September 18th – 22nd) Chapter 3.

Lab 3: (Part 1) Identification of a Substance Based on Physical Properties: Solid and Liquid (September 19th)

Exam 1: Thursday, September 21st

Week 6 (September 25th – 29th) Chapter 3/Chapter 4

Lab 3: (Part 2) Identification of a Substance Based on Physical Properties: Solid and Liquid (September 26th)

Week 7 (October 2nd – 6th) Chapter 4

Lab 4: Study of Physical and Chemical Changes (October 3rd)

Week 8 (October 9th – 13th) Chapter 4/Chapter 5

Lab 5: Determining an Empirical Formula (October 10th)

Exam 2: Thursday, October 12th

Week 9 (October 16th – 20th) Chapter 5

Lab 6: Percentage of Water of Hydration (October 17th)

Week 10 (October 23rd – 27th) Chapter 6

Lab 7: Purity of Sodium Bicarbonate (October 24th)

October 24th: Last day for student-initiated withdrawals.

Week 11 (October 30th – November 3rd) Chapter 6/Chapter 7

Lab 8: Acid-Base Titrations (October 31st)

Week 12 (November 6th – 10th) Chapter 7

Lab 9: Physical Behavior of Gases (November 7th)

Exam 3: Thursday, November 9th

Week 13 (November 13th – 17th) Chapter 8

Lab 10: Atomic Mass by Calorimetry (November 14th)

Week 14 (November 20th – 24th) Chapter 8/Chapter 9

November 21st: Otsmar's Birthday

Thanksgiving Break (November 22nd – 24th)

Week 15 (November 27th – December 1st) Chapter 10

Lab: This time will be used for lecturing. (November 28th)

Exam 4. Thursday, November 30th

Week 16 (December 4th – 8th)

Final Exam: Thursday, December 7th. 11:10 am – 1:10 pm.

This schedule is subject to change. You will be informed of any changes to the syllabus by email, Brightspace or class announcements.

Course Grading Information:

Class grades are not rounded up! Your grade will be calculated and reported with three (3) significant figures.

Chapter Exams (4) will count equally for **40 %** of the course grade. These are essentially non-cumulative; however due to the way Chemistry builds on former topics, students could be at an advantage if they retain information from past chapters. You must only use the material provided by the instructor during the exams. Exams may contain a combination of multiple choice, short answer questions, as well as problem solving when applicable. These exams will be online and must be completed during a period of one hour and twenty minutes.

Chapter exams must be taken on the day according to the schedule above. Please note the you must be present for all exams.

The final will be a comprehensive exam and will be given on the final exam date according to MCC. It represents **15 %** of the course grade. ***Make up final exam is NOT offered.*** Your Final Exam grade will replace your lowest chapter exam grade, excluding a grade of zero (0) if your final exam grade is higher than your lowest chapter exam.

Final exam must be taken on the day and time according to the schedule above. So, plan ahead.

The laboratory portion will make up **20%**. Ten labs will be given during the semester. ***Make up labs are NOT offered. No lab grade will be dropped.***

Each laboratory grade will consist of two portions: Lab report and a copy (picture) of the lab notebook.

Lab reports must be handwritten in permanent ink unless otherwise indicated by the instructor. A **minimum** of 10 points is deducted for failure to follow these guidelines. Students must show all calculations where it is required, or you will **lose 5 points** for each missing calculation. **One point is deducted** for **each** error in significant figures or units. Changes to data may only be made by drawing ~~one line~~ (one line) through the information to be changed. **One point is deducted** for **each** instance in which a student writes over or obscures in any way, previously recorded data. Do NOT use correction fluid or tape.

Lab reports are due the following week.

The use of the research notebook in the lab is **MANDATORY**. It is part of your lab grade. Data and observations must be written directly into your research notebook in black pen. DO NOT use the lab report sheet to collect data and observations. You **CANNOT** write data (such as

weights, measurements, etc.) on scratch paper. Failure to follow the above rules will result in a grade of zero for that lab's day. **You must show your research notebook at the end of each lab session to be signed by your instructor.**

Research notebook is a key component of the course. The notebook provides you a place to write notes to yourself on how you will conduct the experiment. Your lab notebook must include the following information:

- 1) Up-to-date Table of Contents
- 2) Pre-lab lecture notes. This section should contain the date, the name of the experiment, and your notes from the pre-lab lecture. Contents should include:
 - a) Safety instructions given in pre-lab lecture
 - b) Any changes from the directions in the lab textbook
 - c) Additional information providing background on chemicals, etc.
 - d) Calculations methods
- 2) Data, observations, calculations, etc.

To get credit for lab, students must avoid wearing the following to lab: Shorts, sleeveless shirts, short skirts, sandals, flip-flops, canvas shoes, high heels (these usually do not sufficiently cover the foot), dangling jewelry, scarves, etc. that might get into the chemicals or the burner flame. All long hair must be tied back. The use of goggles in lab is mandatory. Food or drinks are not allowed in the laboratory. **Students not following these regulations will not be admitted into lab under any circumstances and will receive a grade of zero for that lab.**

A student will receive automatically a grade of 0 corresponding to the laboratory portion if your laboratory average portion is less than 70% or after missing two in-person laboratory activities.

There will be homework exercise problems to be turned in and graded using the Connect, McGraw-Hill system. **It represents 15% of your total grade.** The purpose of these is to encourage students to keep up with the material. Homework questions are designed to challenge you to gain a deeper understanding of the course material as well as to help you master concepts that will be evaluated on the exams. Homework problems will be assigned for each chapter on the McGraw-Hill Connect platform. You will need to log into McGraw-Hill Connect system to complete or review your homework assignments. The grades of the assignments will be averaged into the course grade.

You will have up to two attempts per assignment and up to ten attempts per question including calculations.

Weekly Quizzes (Brightspace) are designed to test your knowledge and understanding of reviewing the material every week. The quizzes will be timed. You will have between 10-20 minutes to answer the quiz. How long a quiz is going to last will depend on the content to be covered on that quiz. You can take the quiz up to five (5) times. The grades of the quizzes will be the grade of your highest attempts. This grade portion represents **10 %** of your total grade.

The lowest two quizzes' grades will be dropped.

Exams 40%

Lab Grade 20%

Homework Assignments 15%

Weekly Quizzes 10%

Final 15%

Your course letter grade will be based on the following scale: 90.0% or more is an A; 80.0 % or more is a B; 70.0 % or more is a C; 60.0 % or more is a D; below 60.0% of the total results in a F.

All the assignments and test grades will be posted in Brightspace for your review. Do not wait until the last day of class if you want to dispute a grade or need further clarification regarding your grades.

Work that is not easily readable or without name will be not be graded. Mathematical solutions must be written in an easily followed format and should be appropriately commented.

Connect McGraw Hill grades can be seen from your Connect account.

All assignments, except homework assignments, must be submitted on Brightspace. Homework assignments must be submitted using the Connect McGraw-Hill system.

Grades will be not released over the phone or by email. If you want to discuss your grade please make a zoom appointment with your instructor. Students are expected to keep a record of their grades and determine their averages using the grading information of this instructor plan.

Late Work, Attendance, and Make Up Work Policies:

Connect McGraw-Hill assignments, laboratory assignments, and quizzes are not accepted late. No exceptions. You are responsible of checking due dates for those assignments. **Extension of time will be not granted. If you have read this far, great job, send me an email with a sentence including the word “chemistry” for some extra credits on your first exam (don’t share this information with your classmates).**

Students will be permitted to make up class work and assignments missed as outlined in the course syllabus due to absences caused by (1) authorized participation in official College functions, (2) personal illness, (3) an illness or a death in the immediate family, (4) Pregnant or Parenting Protections under Title IX and/or Texas State Education Code Chapter 51, Subchapter Z, Section 51.982 or (5) any excused absences as outlined in Section IV of this policy ([Click Here for the MCC Attendance/Absences Policy](#)). In all other cases, the instructor has the prerogative of determining whether a student may make up work missed.

It is the student’s responsibility to inform the instructor of the reason for an absence and to do so in a timely fashion.

Unexcused late assignments receive a grade of zero. All students are requested to adhere to the schedule, and must understand that they are responsible for the academic consequences of their absences.

Make up exams are not offered unless there is a college approved, documented excused absence (as described above) which has to be presented before your instructor next time you attend to the lecture (or lab). ONLY one make up exam per student will be offered during the semester. There will be not being a makeup test for the final exam.

Make up labs are NOT offered. Lab reports are due at the start of the next lab. Late reports are not accepted. It is your responsibility to attend the prelab lecture. A student missing (or considered absent) the prelab lecture regardless of the reason will not be allowed to begin the experiment receiving a grade of zero for the day's lab. Student attending 5 minutes late for the prelab lecture will be considered absent.

Student Behavioral Expectations or Conduct Policy:

“Students are expected to maintain classroom decorum that includes respect for other students and the instructor, prompt and regular attendance, and an attitude that seeks to take full advantage of the education opportunity.”

I have no tolerance for cheating and/or plagiarism. This is your first and last warning.

If there is any evidence of cheating or plagiarism (plagiarism may include the use of ideas, research, or sentence structure without giving proper credit to the creator) on any homework, lab report, quiz, test, or final, you will receive an F for your semester grade and you will be reported to the office of Student Development. This is your only warning.

Tobacco and tobacco product use is prohibited inside college buildings. This includes smokeless products as well as cigarettes, pipes, and cigars.

[Click Here for the MCC Attendance/Absences Policy](https://www.mclennan.edu/highlander-guide/policies.html)

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Click on the link above for the college policies on attendance and absences. Your instructor may have additional guidelines specific to this course.

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ACADEMIC RESOURCES/POLICIES

Accommodations/ADA Statement:

Any student who is a qualified individual with a disability may request reasonable accommodations to assist with providing equal access to educational opportunities. Students should contact the Accommodations Coordinator as soon as possible to provide documentation and make necessary arrangements. Once that process is completed, appropriate verification will be provided to the student and instructor. Please note that instructors are not required to provide classroom accommodations to students until appropriate verification has been provided by the Accommodations Coordinator. For additional information, please visit www.mclennan.edu/disability.

Students with questions or who require assistance with disabilities involving physical, classroom, or testing accommodations should contact:

disabilities@mclennan.edu 2542998122 Room
319, Student Services Center

Title IX:

We care about your safety, and value an environment where students and instructors can successfully teach and learn together. If you or someone you know experiences unwelcomed behavior, we are here to help. Individuals who would like to report an incident of sexual misconduct are encouraged to immediately contact the acting Title IX Coordinator at titleix@mclennan.edu or by calling, Dr. Claudette Jackson, (Accommodations/Title IX) at (254) 299-8465. MCC employees are mandatory reporters and must report incidents immediately to the Title IX Coordinator. Individuals may also contact the MCC Police Department at (254) 299-8911 or the MCC Student Counseling Center at (254) 299-8210. The MCC Student Counseling Center is a

confidential resource for students. Any student or employee may report sexual harassment anonymously by visiting <http://www.lighthouse-services.com/mclennan/>. Go to McLennan's Title IX webpage at www.mclennan.edu/titleix/. It contains more information about definitions, reporting, confidentiality, resources, and what to do if you or someone you know is a victim of sexual misconduct, gender-based violence or the crimes of rape, acquaintance rape, sexual assault, sexual harassment, stalking, dating violence, or domestic violence.

Student Support/Resources:

MCC provides a variety of services to support student success in the classroom and in your academic pursuits to include counseling, tutors, technology help desk, advising, financial aid, etc. A listing of these and the many other services available to our students is available at <http://www.mclennan.edu/campus-resource-guide/>

Academic Support and Tutoring is here to help students with all their course-related needs. Specializing in one-on-one tutoring, developing study skills, and effectively writing essays. Academic Support and Tutoring can be found in the Library and main floor of the Learning Commons. This service is available to students in person or through Zoom. You can contact the Academic Support and Tutoring team via Zoom or email (ast@mclennan.edu) by going to our website (<https://www.mclennan.edu/academic-support-and-tutoring/>).

College personnel recognize that food, housing, and transportation are essential for student success. If you are having trouble securing these resources or want to explore strategies for balancing life and school, we encourage you to contact either MCC CREW – Campus Resources Education Web by calling (254) 299-8561 or by emailing crew@mclennan.edu or a Success Coach by calling (254) 299-8226 or emailing SuccessCoach@mclennan.edu. Both are located in the Completion Center located on the second floor of the Student Services Center (SSC) which is open Monday-Friday from 8 a.m.-5 p.m.

Paulanne's Pantry (MCC's food pantry) provides free food by appointment to students, faculty and staff. To schedule an appointment, go to https://mclennan.co1.qualtrics.com/jfe/form/SV_07byXd7eB8iTqJg. Both the Completion Center and Paulanne's Pantry are located on the second floor of the Student Services Center (SSC).

MCC Foundation Emergency Grant Fund:

Unanticipated expenses, such as car repairs, medical bills, housing, or job loss can affect us all. Should an unexpected expense arise, the MCC Foundation has an emergency grant fund that may be able to assist you. Please go to

<https://www.mclennan.edu/foundation/scholarships-and-resources/emergencygrant.html>

to find out more about the emergency grant. The application can be found at

https://www.mclennan.edu/foundation/docs/Emergency_Grant_Application.pdf.

MCC Academic Integrity Statement:

Go to www.mclennan.edu/academic-integrity for information about academic integrity, dishonesty, and cheating. The unauthorized use of artificial intelligence (AI) for classwork can be a violation of the College's General Conduct Policy. Whether AI is authorized in a course and the parameters in which AI can be used in a course will be outlined by each instructor.

Minimum System Requirements to Utilize MCC's D2L|Brightspace:

Go to <https://www.mclennan.edu/center-for-teachingandlearning/FacultyandStaffCommons/requirements.html> for information on the minimum system requirements needed to reliably access your courses in MCC's D2L|Brightspace learning management system.

Minimum Technical Skills:

Students should have basic computer skills, knowledge of word processing software, and a basic understanding of how to use search engines and common web browsers.

Backup Plan for Technology:

In the event MCC's technology systems are down, you will be notified via your MCC student email address. Please note that all assignments and activities will be due on the date specified in the Instructor Plan, unless otherwise noted by the instructor.

Email Policy:

McLennan Community College would like to remind you of the policy (<http://www.mclennan.edu/employees/policy-manual/docs/E-XXXI-B.pdf>) regarding college email. All students, faculty, and staff are encouraged to use their McLennan email addresses when conducting college business.

A student's McLennan email address is the preferred email address that college employees should use for official college information or business. Students are

expected to read and, if needed, respond in a timely manner to college emails. For more information about your student email account, go to www.mclennan.edu/studentemail.

Instructional Uses of Email:

Faculty members can determine classroom use of email or electronic communications. Faculty should expect and encourage students to check the college email on a regular basis. Faculty should inform students in the course syllabus if another communication method is to be used and of any special or unusual expectations for electronic communications.

If a faculty member prefers not to communicate by email with their students, it should be reflected in the course syllabus and information should be provided for the preferred form of communication.

Email on Mobile Devices:

The College recommends that you set up your mobile device to receive McLennan emails. If you need assistance with set-up, you may email Helpdesk@mclennan.edu for help.

You can find help on the McLennan website about connecting your McLennan email account to your mobile device:

- [Email Setup for iPhones and iPads](#)
- [Email Setup for Androids](#)

Forwarding Emails:

You may forward emails that come to your McLennan address to alternate email addresses; however, the College will not be held responsible for emails forwarded to an alternate address that may be lost or placed in junk or spam filters.

For more helpful information about technology at MCC, go to [MCC's Tech Support Cheat Sheet](#) or email helpdesk@mclennan.edu.

Disclaimer:

The resources and policies listed above are merely for informational purposes and are subject to change without notice or obligation. The College reserves the right to change policies and other requirements in compliance with State and Federal laws. The provisions of this document do not constitute a contract.