Marshall University Syllabus
College of Science
Department of Chemistry

Course

CHM 205, General, Organic, and Biochem

Course Description

Introductory course for health professions students and non-science majors covering basic chemical principles with applications in organic chemistry and biochemistry.

Credits
3 Credit Hours, Undergraduate

Prerequisites

(QM Standard 1.7) There are no formal prerequisites for this course but if your math ACT score was below 18, I would strongly advise you to complete MTH 102 before attempting this course.

Term/Year

Summer I 2023

Format (and Meeting Days/Times/Location)

This course format is a 100% asynchronous online course with no required synchronous meetings (OC).

This course should be completed in one term.

Academic Calendar

For beginning, ending, and add/drop dates, see the Marshall University Academic Calendar (URL: https://www.marshall.edu/academic-calendar/).

Instructor

Gary D. Anderson, PhD ACSF

Contact Information

- Marshall Email: anderson@marshall.edu

Preferred Communication Method and Expected Response Time

(QM Standard 5.3) Whenever you need help with the course or just want to ask a question about anything, you should feel free to contact me. I am semiretired and do not teach any classes other than online courses. I do not keep regular office hours on campus and I do not have a campus phone. The only reliable method for contacting me is by e-mail. I tend to check my e-mail about twice a day (even on weekends) and I tend to reply to e-mail as I receive it. If I am going to be out of e-mail contact for more than a couple of days at a time I will warn you ahead of time.

You may use the e-mail that is internal to the course by clicking on the Messages button in the menu on the left side of the page. If you select Create Message, then click on the "TO" button, the instructor will listed as Gary Anderson (Instructor) and will normally be on the first page of the list.

Alternately, you may send e-mail to anderson@marshall.edu by any of the standard internet mail protocols. I will normally respond by whichever method you used to send your message. If you do not receive a response to an e-mail message within 48 hours you should assume that either your original message or my reply has gone astray in the e-mail system and you should resend the message. If you have reason to believe that the Marshall email server is not working properly you may want to try sending the message to me at wv.alchemist@comcast.net but I only check mail at that address about once a week unless the MU server is down.

Please note that while we tend to think of e-mail as being a nearly instantaneous means of communication there are times that there are significant delays in e-mail transmissions. Under certain circumstances it has been known to take as much as 48 hours for an e-mail message to get between a Marshall University account and an account at a local internet service provider. In fact, I had one case where a student sent me an e-mail message from a Marshall address and it did not arrive until 33 days later. If either server is especially busy or if the network is particularly busy you will see these delays. So, be sure to plan ahead and send e-mail messages as early as possible to avoid problems from unpredicted delays.

General announcements are posted on the course bulletin board and a copy of them is emailed to every student in the course at the time they are posted.

About Me

(QM Standard 1.8) Personal Link
http://www.science.marshall.edu/anderson

Notes

I received my B.S. in Chemistry and my M.S. from the University of Oklahoma. I completed my Ph.D. at Florida State University in 1972. My dissertation research was in the area of isolation of naturally occurring lactones from ragweeds (It's a good thing I am not allergic to pollen!). I spent two years as a Post Doctoral

Research Fellow at Stanford University working on synthesis of marine steroids. While at Stanford, I worked with Professor Carl Djerassi (inventor of the birth control pill).

I spent six years on the faculty at the University of Missouri-Kansas City (home of the Fighting Kangaroos) before joining the Marshall University faculty in 1981. I have taught a wide variety of courses at Marshall including general chemistry, organic chemistry, biochemistry, various advanced courses in organic chemistry, honors seminars, and even Visual Basic programming. I was Chair of the department from 1982-1986. One of my educational activities is to perform "Chemical Magic" shows in elementary, middle, and high schools.

My research interests were originally in synthetic organic chemistry but they have gradually shifted to use of computers in organic chemistry and in chemical education. I spent a sabbatical year at the University of California, Santa Cruz (home of the Banana Slugs) working on computational chemistry projects involving applications of artificial intelligence to organic chemistry.

I am very active in the American Chemical Society, having served 24 years as Councilor for the Central Ohio Valley Section and at the national level I am currently a Member of the Constitution and Bylaws Committee. In 2019 I was selected to be a Fellow of the American Chemical Society.

I am also very active in Alpha Chi Sigma, the Chemistry Professional Fraternity. I was advisor for the Marshall University chapter for many years and served as Grand Master Alchemist (National President) for this organization that has collegiate chapters on 60 campuses and professional chapters in several large cities. I was a Trustee of the Alpha Chi Sigma Educational Foundation for several years and served as President of the Foundation for two years. In 2016 I received the John R. Kuebler Award which is the highest award Alpha Chi Sigma bestows on one of its members.

I participate in a number of activities at the Science History Institute (formerly known as the Chemical Heritage Foundation) in Philadelphia. One of those activities is to serve on the Instruments and Artifacts Committee which acts in an advisory capacity for the Instrument Museum.

COVID-19 Related Information

Marshall's official COVID-19 protocols are online at https://www.marshall.edu/coronavirus (URL: https://www.marshall.edu/coronavirus/). Policies and protocols may change over time as we respond to changing conditions. The website will always contain the most recent information. Students who are unable to follow University requirements due to a disability should seek reasonable accommodations from the Office of Disability Services (ODS; disabilityservices@marshall.edu) during the first week of class.

Required and/or Recommended Texts and Materials

Required Texts and Materials

Text: The text for this course is "The Basics of General, Organic, and Biological Chemistry" v. 2.0.4. by David W. Ball, John W. Hill, and Rhonda J. Scott. The book is published by Flat World. The text is available in printed form or in digital form. The eISBN number for the book is 978-1-4533-9345-1

The MU Bookstore sells access passes for the text or you can order it direct from the publisher by going to https://students.flatworldknowledge.com/course/2596710.

For $35 you can get online access - this gives you internet access to the text materials but you can only use it while you are logged in to the Flatworld web site. For $55 you can purchase a package that gives you online access plus Ebook downloads. If you get this digital version, you can access the book through the web or you can download it as PDF files which you can print or read from your computer. Files that can be loaded on an iPad, a Kindle reader, or some Android devices are also included. If you have really good eyesight you could even put the book on your smart phone. For $60 you can buy a package that gives you online access plus a color printed text book. For $80 you can get a package that includes online access, Ebook downloads and the color printed textbook. You get immediate access to the digital materials and the printed book is shipped about a week after you order it. The most cost effective option is the $80 package because it gives you multiple options for accessing the book at a reasonable price.

Note that all of the packages include the access pass. If you buy just the access pass either through the bookstore or through the publisher's web site you can upgrade at any time for the difference between the publisher web site price for the access pass and whatever package you want to upgrade to.

Note that all three formats (access pass, downloadable files, printed book) have exactly the same content. So you can select the format that best fits your budget and your way of reading text materials.

Recommended/Optional Texts and Materials

Calculator:

You will need a basic scientific calculator. You should be able to find a suitable calculator for around $15 or less. I do not recommend that you buy an expensive calculator. You will be better off with an inexpensive calculator that you can learn to use easily instead of with an expensive calculator with so many capabilities that you have a hard time learning how to use it. The calculator that is installed as a part of Windows is a good example of what you need and, in fact, you may want to use it for the quizzes. An onscreen scientific calculator is included in the LockDown Browser for use on exams.

Models: In the last half of the course you may find it useful to have a set of molecular models. If you buy a set of models you should not spend more than

about $20 because even a very low cost set of models should be sufficient for your needs.

Technology and Technical Skill Requirements

(QM Standards 1.5 and 1.6) [Enter requirements such as the example below. Edit as needed and delete anything that is not required.]

- Students must be proficient in the use of computers, the Internet, browsers, Microsoft Office Word, and other common applications.
- For computer and browser requirements, see "Get Connected" and "Internet Browser" at Student Resources: First Steps. See also IT: Recommended Hardware (URLs: https://www.marshall.edu/design-center/students/ and https://www.marshall.edu/it/recommendations/).
- To check your browsers, use the Blackboard Browser Checker and ensure that you set permissions properly and have all the necessary plug-ins. (URL: https://help.blackboard.com/Learn/Student/Getting_Started/Browser_Support/Browser_Checker)
- Students must be able to use Marshall email, as well as the following tools in Blackboard: course messages, assignments, discussion board forums, tests, blogs, journals, wikis, and groups. Links to Blackboard Help and tutorials are available on the Start Here page and on the Tech Support tab in Blackboard.
- Virtual (VC) courses may require a webcam and microphone to use Microsoft Teams (or Zoom, with permission from IT) for synchronous meetings.
- Adobe Acrobat Reader may be needed to read some files. This plug-in is available free. (URL: https://get.adobe.com/reader/) See the Tech Support tab in Blackboard for additional information and links.
- Students may be required to submit assignments as Microsoft Word documents (.docx), using the most recent Microsoft Office suite. Office 365 is available at no extra charge to students enrolled at MU. For information visit Marshall IT: Office 365 (URL: https://www.marshall.edu/it/office365/).
- See the Tech Support tab in Blackboard for additional information on browsers, technology, and apps.

Technology Assistance

(QM Standard 7.1) If you have technical problems, please contact one or more of the following:

- Blackboard Support (URL: https://www.marshall.edu/design-center/support-ticket/)
- Marshall Information Technology (IT) Service Desk (Help Desk) (URL: https://www.marshall.edu/it/departments/it-service-desk/)
    - Huntington: (304) 696-3200
    - South Charleston: (304) 746-1969

- Email the IT Service Desk (itservicedesk@marshall.edu)

Using LockDown Browser and a Webcam for Online Exams

This course requires the use of LockDown Browser and a webcam for online exams. The webcam can be built into your computer or can be the type that plugs in with a USB cable. Plug in web cams are available from Amazon starting at about $25. LockDown Browser requires either a Macintosh computer or a Windows based PC – Chromebook computers will not work with LockDown Browser.

Watch this short video to get a basic understanding of LockDown Browser and the webcam feature. A student Quick Start Guide is also available.

Then download and install LockDown Browser from this link:

https://download.respondus.com/lockdown/download.php?id=323615594

To ensure LockDown Browser and the webcam are set up properly, do the following:

- Exit your regular browser and shut down any applications that access the network
- Start LockDown Browser, log into Blackboard, and select this course.
- Locate and select the **Help Center** button on the LockDown Browser toolbar.
- Run the **Webcam Check** and, if necessary, resolve any issues.
- Run the **System & Network Check**. If a problem is indicated, see if a solution is provided in the Knowledge Base. Troubleshooting information can also be emailed to our institution's help desk.
- Exit the Help Center and locate the practice quiz named Practice Exam. Select Lecture Notes/Quizzes from the main course menu. The link for the Practice Exam is at the top of that page.
- Upon completing and submitting the practice quiz, exit LockDown Browser.

When taking an online exam that requires LockDown Browser and a webcam, remember the following guidelines:

- Ensure you're in a location where you won't be interrupted
- Turn off all other devices (e.g. tablets, phones, second computers) and place them outside of your reach
- Clear your desk of all external materials not permitted — books, papers, other devices.
- You are permitted to have a basic periodic table. Print out the one that is posted in the course before starting the exam.
- You will be required to show your photo id (Marshall student id or driver's license) to the camera before starting the exam.
- Before starting the test, know how much time is available for it, and that you've allotted sufficient time to complete it

- Remain at your computer for the duration of the test
- If the computer or networking environment is different than what was used previously with the **Webcam Check** and **System & Network Check** in LockDown Browser, run the checks again prior to starting the test
- To produce a good webcam video, do the following:
    - Avoid wearing baseball caps or hats with brims
    - Ensure your computer or tablet is on a firm surface (a desk or table). Do NOT have the computer on your lap, a bed or other surface where the device (or you) are likely to move
    - If using a built-in webcam, avoid tilting the screen after the webcam setup is complete
    - Take the exam in a well-lit room and avoid backlighting, such as sitting with your back to a window
- Remember that LockDown Browser will prevent you from accessing other websites or applications; you will be unable to exit the test until all questions are completed and submitted
- If the LockDown Browser is correctly installed the system will not ask for a password for the exam.

Course Purpose

(QM Standard 1.2) This course is designed to give students in the health related science areas a background in basic chemistry concepts that will be needed in the courses in their major and in the workplace after graduation.

Course Objectives/Outcomes

(QM Standards 2.1 and 2.3)

Desired Learner Outcomes

(QM Standard 2.4) The table below shows the following relationships: How each student learning outcome will be practiced and assessed in the course.

Student Learning Outcomes (by chapter)	How students will practice each outcome in this course	How each outcome will be assessed in this course
Chapter 1 • Define chemistry in relation to other sciences.	repeatable online quizzes	quizzes exams

• Identify the general steps in the scientific method. • Use chemical and physical properties, including phase, to describe matter. • Identify a sample of matter as an element, a compound, or a mixture. • Express quantities properly, using a number and a unit. Express a large number or a small number in scientific notation. • Identify the number of significant figures in a reported value. • Use significant figures correctly in arithmetical operations. • Recognize the SI base units and explain the system of prefixes used with them. • Convert a value reported in one unit to a corresponding value a different unit.		
Chapter 2 • Define a chemical element and give examples of the abundance of different elements. • Represent a chemical element with a chemical symbol. • Explain all matter is composed of atoms. • Describe the modern atomic theory. • Describe the three main subatomic particles. • State how the subatomic particles are arranged in atoms. • Define and differentiate between the atomic number and the mass number of an element. • Explain how isotopes differ from one another. • Define atomic mass and atomic mass unit. • Describe how electrons are grouped within atoms. • Explain how elements are organized into the periodic table. • Describe how some characteristics of elements relate to their positions on the periodic table.	repeatable online quizzes	quizzes exams
Chapter 3 • Define the octet rule. • Describe how ionic bonds are formed. • Define the two types of ions. • Use Lewis diagrams to illustrate ion formation.	repeatable online quizzes	quizzes exams

• Write the chemical formula for a simple ionic compound. • Recognize polyatomic ions in chemical formulas. • Use the rules for naming ionic compounds. • Determine the formula mass of an ionic compound.		
Chapter 4 • Describe how a covalent bond forms. • Determine the chemical formula of a simple covalent compound from its name. • Determine the name of a simple covalent compound from its chemical formula. • Recognize molecules that are likely to have multiple covalent bonds. • Compare covalent bonds in terms of bond length and bond polarity • Determine the molecular mass of a molecule. • Predict the general shape of a simple covalent molecule.	repeatable online quizzes	quizzes exams
Chapter 5 • Correctly define a law as it pertains to science. • State the law of conservation of matter. • Define *chemical reaction.* • Use a balanced chemical equation to represent a chemical reaction. • Calculate the amount of one substance that will react with or be produced from a given amount ot another substance. • Classify a given chemical reaction into a variety of types. • Identify a chemical reaction as an oxidation-reduction reaction. • Identify oxidation-reduction reactions with organic compounds.	repeatable online quizzes	quizzes exams
Chapter 6 • Define the mole unit.	repeatable online quizzes	quizzes exams

• Learn how the masses of moles of atoms and molecules are expressed. • Convert quantities between mass units and mole units. • Use a balanced chemical reaction to determine molar relationships between the substances. • Convert from mass or moles of one substance to mass or moles of another substance in a chemical reaction.		
Chapter 7 • Define *energy* and *heat.* • Relate heat transfer to temperature change. • Determine the heat associated with a phase change. • Define *bond energy.* • Determine if a chemical process is exothermic or endothermic. • Relate the concept of energy change to chemical reactions that occur in the body.	repeatable online quizzes	quizzes exams
Chapter 8 • Define *phase*. • Identify the type of interactions between molecules. • Describe the solid and liquid phases. • Describe the gas phase. • Predict the propert1es of gases using the gas laws.	repeatable online quizzes	quizzes exams
Chapter 9 • Understand what causes solutions to form. • Express the amount of solute in a solution in various concentration units. • Use molarity to determine quantities in chemical reactions. • Determine the resulting concentration of a diluted solution. • Describe the dissolution process at the molecular level. • Describe how the properties of solutions differ from those of pure solvents.	repeatable online quizzes	quizzes exams

Chapter 10 • Recognize a compound as an Arrhenius acid or an Arrhenius base. • Recognize a compound as a Brønsted-Lowry acid or a Brønsted-Lowry base. • Illustrate the proton transfer process that defines a Brønsted-Lowry acid-base reaction. • Write chemical equations for water acting as an acid and as a base. • Describe the difference between strong and weak acids and bases. • Describe how a chemical reaction reaches chemical equilibrium. • Define the pH scale and use it to describe acids and bases. • Define *buffer* and describe how it reacts with an acid or a base.	repeatable online quizzes	quizzes exams
Chapter 11 • Define and give examples of the major types of radioactivity • Define *half-life* • Determine the amount of radioactive substance remaining after a given number of half-lives. • Express amounts of radioactivity in a variety of units. • Learn some applications of radioactivity • Explain where nuclear energy comes from. • Describe the difference between fission and fusion	repeatable online quizzes	quizzes exams
Chapter 12 • Define organic chemistry. • Identify organic molecules as alkanes, alkenes, alkynes, alcohols, or carboxylic acids. • Recognize the composition and properties typical of organic and inorganic compounds. • Identify and name simple (straight-chain) alkanes given formulas and write formulas for straight-chain alkanes given their names. • Learn how alkane molecules can have branched chains and recognize compounds that are isomers.	repeatable online quizzes	quizzes exams

• Write condensed structural formulas for alkanes given complete structural formulas. \ • Draw line-angle formulas given structural formulas. • Name alkanes by the IUPAC system and write formulas for alkanes given IUPAC names. • Name halogenated hydrocarbons given formulas and write formulas for these compounds given names • Name cycloalkanes given their formulas and write formulas for these compounds given their names. Name alkenes given formulas and write formulas for alkenes given names. • Recognize alkenes that *can* exist as *cis-trans* isomers. • Classify isomers as *cis* or *trans*. • Draw structures for *cis-trans* isomers given their names • Write equations for the addition reactions of alkenes with hydrogen, halogens, and water.		
Chapter 13 • Recognize carbohydrates and classify them as mono-, di-, or polysaccharides. • Classify monosaccharides as aldoses or ketoses and as trioses, tetroses, pentoses, or hexoses. • Distinguish between a D sugar and an L sugar. • Identify the structures of D-glucose, D-galactose, and D-fructose and describe how they differ from each other. • Define what is meant by anomers and describe how they are formed. • Explain what is meant by mutarotation • Identify the physical and chemical properties of monosaccharides • Identify the structures of sucrose, lactose, and maltose • Identify the monosaccharides that are needed to form sucrose. lactose, and maltose • Compare and contrast the structures and uses of starch, glycogen, and cellulose	repeatable online quizzes	quizzes exams
Chapter 14 • Recognize the structures of common fatty acids and classify them as saturated, monounsaturated, or polyunsaturated. • Explain why fats and oils are referred to as triglycerides.	repeatable online quizzes	quizzes exams

• Explain how the fatty acid composition of the triglycerides determines whether a substance is a fat or oil. • Describe the importance of key reactions of triglycerides, such as hydrolysis, hydrogenation, and oxidation. • Identify the distinguishing characteristics of membrane lipids. • Describe membrane components and how they are arranged. • Identify the function of steroids produced in mammals.		
Chapter 15 • Recognize amino acids and classify them based on the characteristics of their side chains. • Explain how an amino acid can act as both an acid and a base. • Explain how a peptide is formed from individual amino acids. • Explain why the sequence of amino acids in a protein is important. • Describe the four levels of protein structure. • Identify the types of attractive interactions that hold proteins in their most stable three-dimensional structure. • Explain what happens when proteins are denatured. • Identify how a protein can be denatured. • Explain the functions of enzymes. • Explain how enzymes are classified and named. • Describe the interaction between an enzyme and its substrate. • Describe how pH, temperature, and the concentration of an enzyme and its substrate influence enzyme activity. • Explain what an enzyme inhibitor is. • Distinguish between reversible and irreversible inhibitors. • Distinguish between competitive and noncompetitive inhibitors. • Explain why vitamins are necessary in the diet.	repeatable online quizzes	quizzes exams

Chapter 16 • Identify the different molecules that combine to form nucleotides. • Identify the two types of nucleic acids and the function of each type. • Describe how nucleotides are linked together to form nucleic acids. • Describe the secondary structure of DNA and the importance of complementary base pairing. • Describe how a new copy of DNA is synthesized. • Describe how RNA is synthesized from DNA. • Identify the different types of RNA and the function of each type of RNA. • Describe the characteristics of the genetic code. • Describe how a protein is synthesized from mRNA. • Describe the causes of genetic mutations and how they lead to genetic diseases. • Explain how viruses reproduce in cells.	repeatable online quizzes	quizzes exams

Course Structure

(QM Standard 1.2)) Basically the course consists of a series of "lecture note" files presented through Blackboard organized as 64 units arranged into four folders. These are text files but they do include some graphics when needed to clarify points. These files represent roughly what I would say in a face to face class during 10 to 20 minutes of lecture time on a particular topic. Some topics are concept related but some involve mathematical calculations. Detailed worked out examples are included for most of the calculation type problems.

Each unit has a brief quiz and the student must score at least 8 out of 10 to show that they understand the topic well enough to go on to the next topic. Once a student has completed all the topics in a folder they will be given an exam covering the topics in that folder.

A complete list of topics are shown near the end of this syllabus with an indication of how they are arranged in folders and subfolderes.

Course Requirements/Due Dates

Exam Target Dates and Deadlines

Students in this course have a maximum of one semester to complete the course.

There are no specific due dates for any quizzes or exams but there are “milestones” that have to be met. There are no specific milestones for individual quizzes but all of the quizzes in any given Part must be completed before the student can take the exam for that part.

At the beginning you will only see icons for lecture notes for one topic and a quiz for that topic. You must make a score of 8 or more on any quiz before you will be able to see the next topic in the course. When you achieve an 8 the icons for the next topic lecture notes and quiz will automatically appear. You are not eligible to take an exam until you have completed all the quizzes in that Part of the course. For example, you must complete quiz #14 before you can take Exam I.

Each exam has a Bonus Date, a Penalty Date, and a Last Access Date. If you complete an exam on or before the Bonus Date for that exam I will reward you by adding 20 points to your overall grade. If you do not complete the exam on or before the Penalty Date, I will subtract 20 points from your overall grade. If you do not complete an exam on or before the Last Access Date for that exam you will not be able to take the exam and you will receive a score of zero

If you receive a score of zero on any of the first three exams because you didn't take it before the last access date, you will be given access to the first topic in the next Part at that time.

Dates for Summer I 2023 are:

Exam	Bonus Date	Penalty Date	Last Access Date
Exam I	Friday June 2, 2023	Thursday June 8, 2023	Wednesday July 5, 2023
Exam II	Monday June 26, 2023	Wednesday July 5, 2023	Friday July 14, 2023
Exam III	Monday July 17, 2023	Friday July 21, 2023	Friday July 28, 2023
Exam IV	Monday July 31, 2023		Friday August 4, 2023
Final Exam	Monday July 31, 2023		Friday August 4, 2023

NOTE WELL. A score of zero will be recorded for any exam not completed by the last access date for that exam or any quiz or exam not completed on or before Friday, August 4, 2023.

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Course Policies

(QM Standard 1.4) By enrolling in this course, you agree to the following course policies.

Attendance/Participation Policy

This a 100% asynchronous online course so there are no specific attendance requirements. In a normal classroom setting for this course you would be expected to attend approximately 45 hours of lectures. You would also be expected to spend roughly double that amount of time studying for the course outside of class. The e-course format does not work magic -- you should expect to spend at least the same number of hours completing this course. Do not put off working on the course and then expect to be able to complete it in a couple of days. Be sure to try to meet the target dates so that you can successfully complete the course.

Online Communication Expectations

(QM Standard 1.3)) It is important to recognize that the online classroom is in fact a classroom, and certain behaviors are expected when you communicate with both your peers and your instructors. These guidelines for online behavior and interaction are known as netiquette. This particular set of guidelines is based on the guidelines posted on the University of Florida's web site.

SECURITY

Remember that your password is the only thing protecting you from pranks or more serious harm.

- Don't share your password with anyone .
- Change your password if you think someone else might know it.
- Always log out when you are finished using the system.

GENERAL GUIDELINES

When communicating online:

- You should never post any grade related information in the Discussion Board area. If you have questions about grade related matters you should send them to the instructor using email.
- Treat your instructor and classmates with respect in email or any other communication.
- Use clear and concise language.
- Remember that all college level communication should have correct spelling and grammar (this includes discussion boards).
- Avoid slang terms such as "wassup?" and texting abbreviations such as "u" instead of "you."

- Use standard fonts such as Ariel, Calibri or Times new Roman and use a size 12 or 14 pt. font
- Avoid using the caps lock feature AS IT CAN BE INTERPRETTED AS YELLING.
- Limit and possibly avoid the use of emoticons like :) or☹.
- Be cautious when using humor or sarcasm as tone is sometimes lost in an email or discussion post and your message might be taken seriously or sound offensive.
- Be careful with personal information (both yours and other's).
- Do not send confidential information via e-mail.

EMAIL NETIQUETTE

When you send an email to your instructor, teaching assistant, or classmates, you should:

- Use a descriptive subject line.
- Be brief.
- Avoid attachments unless you are sure your recipients can open them.
- Avoid HTML in favor of plain text.
- Sign your message with your name and return e-mail address.
- Think before you send the e-mail to more than one person. Does everyone really need to see your message?
- Be sure you REALLY want everyone to receive your response when you click, "reply all."
- Be sure that the message author intended for the information to be passed along before you click the "forward" button.

Discussion Board Netiquette and Guidelines

When posting on the Discussion Board in your online class, you should:

- Before posting a question to a discussion board, check to see if anyone has already asked it and received a reply.
- Remember your manners and say please and thank you when asking something of your classmates or instructor.
- Be open-minded.
- If you ask a question and many people respond summarize all posts for the benefit of the class.
- When posting:
    - Make posts that are on topic and within the scope of the course material.
    - Be sure to read all messages in a thread before replying.
    - Be as brief as possible while still making a thorough comment.
    - Don't repeat someone else's post without adding something of your own to it.

    - Take your posts seriously. Review and edit your posts before sending.
    - Avoid short, generic replies such as, "I agree." You should include why you agree or add to the previous point.
    - If you refer to something that was said in an earlier post, quote a few key lines so reader do not have go back and figure out which post you are referring to.
    - Always give proper credit when referencing or quoting another source.
    - If you reply to a classmate's question make sure your answer is correct, don't guess.
- Always be respectful of others' opinions even when they differ from your own.
    - When you disagree with someone, you should express your differing opinion in a respectful, non-critical way.
    - Do not make personal or insulting remarks.
    - Do not write anything sarcastic or angry, it always backfires.
    - Do not type in ALL CAPS, if you do IT WILL LOOK LIKE YOU ARE YELLING.

Grading Policy

Grading Scale

(QM Standard 3.2) Grading Scale

(QM Standard 3.2) There will be four hour exams and a final exam in addition to the 64 quizzes. The 64 quizzes are worth 10 points each. The four hour exams are worth 240 points each and the final exam is worth 320 points.

So, it is possible to earn up to 640 points from the quizzes, up to 960 points from the four exams and up to 320 points from the final for a total of 1920 possible points in the course.

Letter grades will be assigned based on the following scale for the total points

- 1728 points or higher = A
- 1536-1727 points = B
- 1344-1535 points = C
- 1152-1343 points = D

- Less than 1152 points = F

Since I want to encourage students to complete this course in a timely manner, I will add 20 points to your total if you take an hour exam on or before the Bonus Date for that exam. On the other side of the coin, I will deduct 20 points from your total if you take an hour exam after the Penalty Date for that exam. I will also add 20 points to your total if you complete the final exam before the Bonus Date for the final. If you take full advantage of this incentive, you can raise your grade by close to half a letter grade. On the other hand, failure to complete the coursework on schedule can cost you severely. I will post reminders of the target dates on the bulletin board from time to time so be sure to check the bulletin board for this.

The hour exams will be given on-line. There is a time limit on the exams and it will be enforced by the computer -- no answers will be accepted after the time limit on an exam. You will get the graded exam back with your score and feedback on your errors. **Exams are closed book, closed note. You are on your honor to take the exams without any assistance and without referring to any materials other than the basic periodic table in that is posted in the course. You may not use any calculator other than the one in included in the Respondus LockDown Browser.**

The final exam will be handled the same way as the hour exams. You only get one attempt on each exam and the time limit is enforced.

The quizzes are all taken on-line and the scores and the correct answers are available to you as soon as you complete the quiz. Quizzes are designed as learning tools rather than as grading tools so there is no time limit on quizzes. You cannot repeat exams but you can repeat quizzes as many times as you wish – only the highest score for the quiz will count toward your final grade.

Late Work Policy

(QM Standard 3.2) If you do not complete an exam on or before the Last Access Date for that exam you will not be able to take the exam and you will receive a score of zero

By Marshall Univerity Policy a grade of Incomplete requires that the student has completed at least 75% of the course and the reason for not completing the assignments has to be in line with Marshall University policy for excused absences.

Anticipated Response Time for Grading and Feedback

(QM Standard 3.5, 5.3) Quizzes are computer graded and the scores are available immediately after submitting the quiz. Since students only get one try on Exams I review the computer scoring of every exam. The student sees the computer score immediately after submitting the exam. The results of my review are typically

available within 48 hours of submitting the exam. When you go to myGrades you will see a second score for the exam after I have finished the review.

Evaluation Criteria

(QM Standard 3.3) The answers to the questions on the quizzes and exams are objective. During the review process I try to give an answer full or partial credit the same way I would on a paper exam.

University Policies

(QM Standard 1.4) By enrolling in this course, you agree to the University Policies. Please read the full text of each policy (listed below) by going to MU Academic Affairs: University Policies. (URL: https://www.marshall.edu/academic-affairs/policies/)

- Academic Dishonesty Policy
- Academic Dismissal Policy
- Academic Forgiveness Policy
- Academic Probation and Suspension Policy
- Affirmative Action Policy
- Dead Week Policy
- D/F Repeat Rule
- Excused Absence Policy for Undergraduates
- Inclement Weather Policy
- Sexual Harassment Policy
- Students with Disabilities (Policies and Procedures)
- University Computing Services Acceptable Use Policy

Students with Disabilities

(QM Standard 7.2) For University policies and the procedures for obtaining services, please go to MU Academic Affairs: University Policies and read the section, **Students with Disabilities**. (URL: https://www.marshall.edu/academic-affairs/policies/)

Marshall University E-Mail Accounts

You must have and use your MU email account. Your personal email accounts will not be used for official communication with Marshall University programs and personnel. You may redirect your MU email to your own personal email account, but you must sign in to your MU account to do that**.** Marshall University uses Office 365 email. For more information, visit Marshall IT: Office 365 (URL https://www.marshall.edu/it/office365/).

Course Schedule

See the section on Exam Target Dates and Deadlines.

Topics to Be Covered in This Course

Part I

Chapter 1
01-Introduction
02-Scientific Notation
03-Significant Figures
04-Measurements and Units
05-Unit Conversions
06-Density

Chapter 2
07-The Elements
08-Atomic Structure
09-Nuclei of Atoms
10-Arrangement of Electrons
11-Periodic Table

Chapter 3
12-Ionic Bonding
13-Formulas of Ionic Compounds
14-Naming Ions and Ionic Compounds

Part II

Chapter 4
15-Covalent Compounds
16-Multiple Covalent Bonds
17-Covalent Bond Characteristics
18-Formula Mass, Molecular Mass

Chapter 5
19-Chemical Equations
20-Types of Reactions
21-Redox Reactions

Chapter 6
22-The Mole
23-Stoichiometry-Moles
24-Stoichiometry-Mass

Chapter 7

57-Peptides and Proteins
58-Enzymes
59-Enzyme Activity
60-Enzyme Inhibition

Chapter 16

61-Nucleotides
62-Nucleic Acids
63-Replication and Transcription
64-Mutations and Viruses