

Syllabus

Course Code: Chem-136
Chemistry

Title: Introduction to General, Organic, and Biological

Institute: STEM

Department: Chemistry

Course Description: The student will consider selected concepts from inorganic, organic and biological chemistry which will be applied to allied health and biological fields. Skills will be developed in a laboratory program which enhances topics under consideration. The program is designed for students who have had no previous chemistry course.

Prerequisites: MATH-012 or MATH-015 or satisfactory completion of the college's basic skills requirement in computation

Corequisites: None

Prerequisites or corequisites:

Credits: 4

Lecture Hours: 3

Lab/Studio Hours: 3

Required Textbook/Materials:

Face to face students

Text: *Chemistry: An Introduction to General, Organic, and Biological Chemistry*, 13th edition, by Timberlake, Pearson Publishing

Lab Manual: *Essential Laboratory Manual for Introduction to General, Organic, and Biological Chemistry*, 2nd Ed, by Timberlake ISBN: 978-0-13-605547-1

Scientific calculator (At minimum)

Laboratory Coat

Remote Live Students

Text: *Chemistry: An Introduction to General, Organic, and Biological Chemistry*, 13th edition, by Timberlake, Pearson Publishing

Lab Manual: *Essential Laboratory Manual for Introduction to General, Organic, and Biological Chemistry*, 2nd Ed, by Timberlake ISBN: 978-0-13-605547-1

Scientific calculator (At minimum)

Fully Online Students

Text: *Chemistry: An Introduction to General, Organic, and Biological Chemistry*, 13th edition, by Timberlake, Pearson Publishing

Scientific calculator (At minimum)

Additional Time Requirements: NONE

Additional Support/Labs:

See <https://www.brookdalecc.edu/academic-tutoring/>

Department tutoring may be available depending upon staffing

Course Learning Outcomes:

1. Utilize critical thinking skills to learn fundamental concepts from inorganic, organic, and biological chemistry (Critical Thinking, Mathematical Skill Competency, Problem Solving Competency)
2. Perform chemistry-based problem solving. Reinforcement of chemical concepts will be made as hands-on skills are developed in the laboratory program (Critical Thinking, Mathematical Skill Competency, Problem Solving Competency)
3. Demonstrate proper measurement techniques (Critical Thinking)
4. Convert between metric and English units (Critical Thinking, Mathematical Skill Competency, Problem Solving Competency)
5. Identify components of an IV bag and prove charge balance exists between electrolytes (Critical Thinking, Mathematical Skill Competency, Problem Solving Competency)
6. Identify differences between organic functional groups like alcohols, aldehydes, ketones, carboxylic acids, and esters (Critical Thinking, Problem Solving Competency)
7. Describe differences between carbohydrates, peptides, and proteins (Critical Thinking, Problem Solving Competency)

Course Content:

UNIT 1A	Measurements and Energy and Matter
UNIT 1B	Atoms and Elements
UNIT 1C	Nuclear Radiation
UNIT 2A	Compounds and their Bonds
UNIT 2B	Chemical Quantities
UNIT 2C	Gases
UNIT 3A	Solutions
UNIT 3B	Acids and Bases
UNIT 4A	Introduction to Organic Chemistry
UNIT 4B	Alcohols, Phenols, Thiols, Ethers, Aldehydes, and Ketones
UNIT 4C	Carboxylic Acids, Esters, Amines, and Amides
UNIT 5A	Carbohydrates
UNIT 5B	Lipids
UNIT 5C	Amino Acids and Proteins
UNIT 5D	Enzymes and Digestion

UNIT 1A

Chapters: 1, 2 (omit 2.2 and 2.3) 3.3, 3.4, 3.5, 3.7

Name of Unit: Measurements and Energy and Matter

Unit Objective: Apply some of the basic concepts of the metric system, density, specific gravity, and energy. Also distinguish between solids, liquids, and gases.

LEARNING OBJECTIVES	OBTAINING THE OBJECTIVES
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Chapter 1 and 2

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|---|--|
| 1. Create a study plan for learning Chemistry. | READ: 1.3
DO: all on page 9 |
| 2. Convert numbers to scientific notation and vice versa. | READ: 1.5
DO: 1.47-48 |
| 3. Perform conversions within the metric system and between the metric and U.S. | READ: 2.1, 2.4-2.6
MEMORIZE: Table 2.5
DO: 2.1-8, 31-46, 47-52 (no sig figs), 53-65, 97-102, 109-14 |
| 4. Solve problems involving density and specific gravity. | READ: 2.7
DO: 2.66-70, 89-94 |

Chapter 3

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|--|---|
| 5. Solve energy problems:
a.) Potential and kinetic energy
b.) Energy Units
c.) Calories in carbohydrates, lipids, and proteins | READ: 3.4-3.5
CHEM. LINK TO HEALTH (CLTH):
p. 76
DO: 3.21-36, 57-58, 69-70, 93-94 |
| 6. Perform conversions between the temperature scales (°F, °C, and K). | READ: 3.3
CLTH: page 71
DO: 3.15-20, 65-66, 81-84 |

4. Solve problems involving density and specific gravity.

READ: 2.7
DO: 2.66-70, 89-94

Chapter 3

5. Solve energy problems:
a.) Potential and kinetic energy
b.) Energy Units
c.) Calories in carbohydrates, lipids, and proteins

READ: 3.4-3.5
CHEM. LINK TO HEALTH (CLTH):
p. 76
DO: 3.21-36, 57-58, 69-70, 93-94

6. Perform conversions between the temperature scales (°F, °C, and K).

READ: 3.3
CLTH: page 71
DO: 3.15-20, 65-66, 81-84

UNIT 1B

Chapter: 3.1, 3.2, 3.7 Chapter 4 (Omit 4.7)

Name of Unit: Matter, Atoms and Elements

Unit Objective: Determine the fundamental structure of an atom

LEARNING OBJECTIVES	OBTAINING THE OBJECTIVES
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Chapter 3 and 4

1. Be able to classify matter according to its components: elements, compounds, mixtures. Discuss states of matter.

READ: 3.1, 3.2, 3.7 (No calculations)
DO: 3.1-14, 43-44, 46-48, 59-62, 71-76

2. Give the names and symbols for elements.

READ: 4.1
MEMORIZE Table 4.2
DO: 4.1-6

3. Discover how the periodic table is organized.
DO: 4.7-16

READ: 4.2
CLTH: p. 104

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|---|--|
| 4. Solve problems involving subatomic particles, isotopes atomic number, and mass number. | READ: 4.3-4.5
DO: 4.17-8, 33-44, 79-85, 93-106, 5.57-58 |
| 5. Give the electron level arrangement for the first 18 elements. | READ: 4.6, Table 4.9
DO: 4.49-52, 107-108 |

UNIT 1C

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|------------------------|---|
| Chapter: | 5 (Omit 5.6) |
| Name of Unit: | Nuclear Radiation |
| Unit Objective: | Explain why some atoms decay radioactively, identify some of the particles emitted, and recognize some of the harmful and beneficial uses of radiation. |

LEARNING OBJECTIVES	OBTAINING THE OBJECTIVES
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Chapter 5

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|---|---|
| 1. Identify common radioactive particles. | READ: 5.1
DO: 5.1-12 |
| 2. Be able to write equations for alpha and beta decay. Complete nuclear equations. | READ: 5.2
DO: 5.13-22, 51-54, 59-62 |
| 3. Recognize units of radiation (no calculations). | READ: 5.3
CLTH: p. 148
DO: 5.23-24 |

4. Complete half-life problems.

READ: 5.4

DO: 5.55-56, 67-68

5. Describe some medical uses
for radioactivity.

READ: 5.5

CLTH: p. 152 and 157, Table 5.8

DO: 5.35

UNIT 2A

Chapters: 6 (Omit 6.8)

Name of Unit: Compounds and Their Bonds

Unit Objective: Describe the types of chemical bonds by showing their formation using valences and Lewis electron dot structures.

LEARNING OBJECTIVES	OBTAINING THE OBJECTIVES
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Chapter 6

1. For atoms:

a.) define and be able to recognize
ions (cations and anions).

b.) Know the charges associated
with groups 1A through 8A
when those elements form ions.

READ: 6.1

MEMORIZE: Table 6.2 and 6.3

DO: 6.5-10

2. List some important ions in the body
and state their function.

CLTH: page 173

3. Name and write formulas for
ionic and molecular compounds.

READ: 6.2-6.5

MEMORIZE: Tables 6.8 on p. 182

DO: 6.11-56, 99-100, 109-110, 115-125

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|---|--|
| 4. Determine valence electrons and draw basic Lewis Electron dot structures. | READ: 6.6
DO: 6.40 |
| 5. Determine if covalent bonds are polar or nonpolar by using the table of electronegativities. Sketch the bond dipole. | READ: 6.7
DO: 6.62-63, 105-106, 129-136 |
| 6. Explore the different attractive forces and their impact on physical properties. | READ: 6.9
DO: 6.79, 83 |

UNIT 2B

- Chapters:** 7 (7.1-7.4 only)
- Name of Unit:** Chemical Quantities
- Unit Objective:** Understand how we count atoms and molecules and be able to solve problems using molar mass.

LEARNING OBJECTIVES	OBTAINING THE OBJECTIVES
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Chapter 7

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|--|--|
| 1. Explain the significance of the mole calculate moles for a certain number of molecules. | READ: 7.1
DO: 7.1-8 |
| 2. Calculate the molar mass of a compound Convert between moles and grams for atoms and compounds. | READ: 7.2-7.3
DO: 7.11-34, 93-96 |
| 3. Use the Law of Conservation of Mass to balance chemical equations. | READ: 7.4
DO: 7.35-40, 83-84, 85-90 (a and b only) |

UNIT 2C

Chapter: 8 (Omit 8.5)
(omit all math in Boyle's, Charles', and Gay-Lussac's Laws,
but **do the math of Dalton's Law**)

Name of Unit: Gases

Unit Objective: Explain the gas laws and apply them.

Lab Experiment: Experiment 14 – Partial Pressures

LEARNING OBJECTIVES	OBTAINING THE OBJECTIVES
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Chapter 8

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|---|---|
| 1. Know the key points to Kinetic molecular Theory of Gases. | READ: 8.1
DO: 8.1-2 |
| 2. Understand the 4 properties that describe a gas. Convert between mmHg, Torr, and atmospheres. | READ: 8.1
CLTH: p. 260
DO: 8.3-8 |
| 3. State and recognize applications of Boyle's, Charles', Gay-Lussac's, and Avogadro's Law. | READ: 8.2 – 8.5 (omit math), 8.6
CLTH: p. 266
DO: 8.9-10, 8.11a, 8.12-4, 24-6, 47-8, 68-9 |
| 4. Explain the relationship between Dalton's Law and partial pressure. Be able to calculate using Dalton's Law. | READ: 8.7
DO: 8.53-60, 70 |

UNIT 3A

Chapter: 9 (Omit 9.5)

Name of Unit: Solutions and Their Properties

Unit Objective: Describe solutions and express solution concentrations as a ratio in mass/volume percent and in molarity. Describe electrolytes, non-electrolytes, colloids, and suspensions. Explain processes of osmosis and dialysis and understand the purpose of the “mEq/L” concentration system.

LEARNING OBJECTIVES	OBTAINING THE OBJECTIVES
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Chapter 9

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|---|---|
| 1. Describe how a solution is formed
Describe the meaning behind “like
dissolves like”. | READ: 9.1
DO: 9.1-6, 77-78, 85 |
| 2. Know and be able to identify
the three types of electrolytes. Express
the relationship between moles and
equivalents. | READ: 9.2
DO: 9.7-16, 79 |
| 3. Describe saturated vs unsaturated
solutions and discuss effects of solubility
for solids and gases. | READ: 9.3
CLTH: p.295 |
| 4. Perform solution concentration
calculations for mass & volume ratios,
mass/volume %, molarity, and dilution. | READ: 9.4 - 9.5
DO: 9.33-59, 80-83, 93-112 |
| 5. List ways in which the body gains
and loses water to maintain fluid
balance. | CLTH: p. 292 |
| 6. For osmosis and dialysis: | READ: 9.6 |

a.) describe the processes in terms of diffusion & membranes. **DO:** 9.63-72, 84

- b.) recognize solutions as iso-, hypo-, or hypertonic, and determine which way water will flow across an osmotic membrane.
1. define osmotic pressure.
 2. determine relative osmotic pressures.

7. For fluid motion explain:

- a.) renal (kidney) function
- b.) hemodialysis

READ: 9.6

CLTH: p. 312 & 313

UNIT 3B

Chapter:	10 (Omit calculations) (Omit 10.4 and 10.5)
Name of Unit:	Acids and Bases
Unit Objective:	Recognize acids, bases, and salts, and determine the pH range for a substance in aqueous solution. Describe systems in the body which guard against drastic pH change.

LEARNING OBJECTIVES	OBTAINING THE OBJECTIVES
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Chapter 10

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|---|---|
| 1. Describe characteristics of and name acids and bases, and write dissociation reactions. Know the difference between strong and weak acids and bases. Use equations to show how acids donate protons and bases accept them. | READ: 10.1–10.3
DO: 10.1-14, 81-82 |
| 2. Understand the ionization of water and the pH Scale.
(No Calculations) | READ: 10.6
CLTH: p. 345
DO: 10.35-36 |
| 3. Know the basic reactions of acids and bases.
(Omit Titrations) | READ: 10.7
CLTH: p 349
DO: 10.45-50 |
| 4. Identify and describe what Buffers are and how they work
List some key buffers in the human body. | READ: 10.8
CLTH: p. 352
DO: 10.55-62 |

UNIT 4A

Chapter:	11 (Omit 11.8)
Name of Unit:	Introduction to Organic Chemistry
Unit Objective:	Compare some specific physical properties of inorganic and organic compounds. Name, draw, and predict reaction products for cyclic and acyclic hydrocarbons and haloalkanes.

LEARNING OBJECTIVES	OBTAINING THE OBJECTIVES
1. Compare inorganic and organic compounds with respect to bonding and physical properties.	READ: 11.1 DO: 11.1-6, 41-42
2. Name and draw any cyclic or acyclic alkane, haloalkane, alkene, alkyne, or aromatic compound. This includes drawing and differentiating between expanded, condensed, and molecular formulae.	READ: 11.2-11.3, 11.5 DO: 11.7-10, 13-18, 46-50, 55-58
3. Define: Structural isomers. Analyze structures to determine if they are isomers. Recognize Alkenes that exhibit cis- and trans-isomerism.	READ: 11.3 CLTH: p. 383 DO: 11.11-12, 29-30, 43-44, 52-53
4. Describe the physical properties of hydrocarbons.	READ: 11.4 DO: 11.19-20
4. Write equations for: a.) combustion of alkanes b.) hydrogenation of alkenes c.) hydrogenation of alkynes (addition) d.) hydration of alkenes (addition)	READ: 11.4 DO: 11.21-22, 33-34, 61-66 .

UNIT 4B

Chapter:	12 (No aromatics or phenols)
Name of Unit:	Alcohols, Thiols, Ethers, Aldehydes, and Ketones
Unit Objective:	Name, draw, and predict reaction products for alcohols, phenols, thiols, ethers, aldehydes, and ketones.

LEARNING OBJECTIVES	OBTAINING THE OBJECTIVES
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Chapter 12

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|---|---|
| 1. Name and draw alcohols, thiols, ethers, aldehydes, and ketones. Describe their physical properties. | READ: 12.1-12.3
CLTH: p. 407
DO: 12.1-8, 15-22, 45-48, 56-58
(No aromatics or phenols) |
| 2. For alcohols:
a.) classify as 1°, 2°, or 3°
b.) explain their water solubility and high boiling point based upon hydrogen bonding
c.) explain why 1° and 2° alcohols oxidize and 3° alcohols do not | READ: 12.2, 12.4
DO: 12.9-14, 43-44, 49-50
(No aromatics or phenols) |
| 3. Write equations for:
a.) dehydration of alcohols to form alkenes
b.) oxidation of 1° alcohols, 2°
c.) alcohols, thiols, and aldehydes | READ: 12.4
DO: 12.27-34, 51-52, 54, 61-62 |

UNIT 4C

Chapter: 14

Name of Unit: Carboxylic Acids, Esters, Amines, and Amides

Unit Objective: Name, draw, and predict reaction products carboxylic acids, esters, amines, and amides

LEARNING OBJECTIVES	OBTAINING THE OBJECTIVES
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Chapter 14

1. Name and draw carboxylic acids (CA), esters, amines, and amides.
READ: 14.1, 14.3, and 14.5
DO: 14.1-6, 19-22, 29-32, 41-44, 57-60, 67-68, 71-72 (**No aromatics**)
2. Explain how hydrogen bonding impacts the water solubility and high boiling point of CAs and amines. Describe the acidic nature of CAs and the basic nature of amines.
READ: 14.2, 14.5
DO: 14.7-10, 35-36
3. For amines:
 - a.) classify as 1°, 2°, or 3°
 - b.) define alkaloid**READ:** 14.4
CLTH: p. 490
DO: 14.33-34, 65-66
4. Write equations for:
Carboxylic acids:
 - a.) ionization
 - b.) neutralization
 - c.) esterification, acidic ester hydrolysis, and saponification
 - d.) amidation and acidic amide hydrolysisAmines:
 - a.) neutralization

UNIT 5A

Chapter: 13 , 18.2

Name of Unit: Carbohydrates

Unit Objective: Classify carbohydrates according to their structures and predict whether a given carbohydrate will give a positive reducing sugar, fermentation, or iodine test. Describe the digestion (hydrolysis), absorption, and storage of carbohydrates.

LEARNING OBJECTIVES	OBTAINING THE OBJECTIVES
1. For carbohydrates: a.) write the photosynthesis equation. b.) write the metabolism equation. c.) identify them given a formula. d.) be familiar with medical conditions associated with them. e.) classify them as aldoses or ketoses and as hexoses and pentoses, etc.	READ: 13.1 CLTH: p 443 DO: 13.1-10
2. Classify carbohydrates as mono-, di- or polysaccharides; indicate components and hydrolysis (digestion) products.	READ: 13.1, 13.6-13.7, 18.2 CLTH: p. 456 (Blood types) DO: 13.41-48
3. Identify open and ring forms of monosaccharides.	READ: 13.4
4. Predict whether a given carbohydrate will give a positive Benedict's.	READ: 13.5 CLTH: p. 452 DO: 13.37-40

UNIT 5B

Chapter: 15, 18.2

Name of Unit: Lipids

Unit Objective: Identify the structure and classes of lipids and describe the digestion of triglycerides.

LEARNING OBJECTIVES	OBTAINING THE OBJECTIVES
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|--|--|
| 1. For lipids: | READ: 15.1-15.3,
DO: 15.1-16, 19-28 |
| a.) List/identify the different classes (e.g. waxes, triglycerides, steroids, etc.) | |
| b.) Give components for each class. | |
| c.) Give examples of compounds from each class. | |
| d.) Define saturated, mono-unsaturated, and polyunsaturated fatty acids and understand how this affects melting point. | |
| 2. For triglycerides: | READ: 15.3-15.4, 18.2 |
| a.) Differentiate between fats & oils | CLTH: p. 522 |
| b.) Write the structure given fatty acid components. | DO: 15.29-30, 37-38 |
| c.) Recognize cis- and trans- fats | |
| d.) Explain what is meant by the terms “partially” and “fully hydrogenated” oils. | |
| e.) Write hydrogenation equations. | |
| f.) Show how soaps are made. | |
| 3. For phospholipids: | READ: 15.7 and 15.7 |
| a.) Describe the similarities and differences between triacylglycerides and phospholipids. | CLTH: p. 529
DO: 15.39-40, 59-60 |
| b.) Their importance in creating phospholipid bilayer. | |
| 4. Describe the general structure and function of steroids. | READ: 15.6-15.7
DO: 15.47, 49-54, 57-58, 61 |

UNIT 5C

Chapter: 16 (16.1 – 16.4)

Name of Unit: Amino Acids and Proteins

Unit Objective: Understand how proteins are synthesized and hydrolyzed (digested) and state structural features of amino acids and proteins.

LEARNING OBJECTIVES	OBTAINING THE OBJECTIVES
1. Describe the classes of proteins and Their functions	READ: 16.1 DO: 16.1-2
2. For amino acids: a.) Recognize the general formula b.) Write an equation joining two amino acids (you won't need to memorize amino acid structures). c.) classify amino acids.	READ: 16.1 DO: 16.3-8, 13-14, 63-64
3. Define and illustrate for amino acids and proteins: a.) Zwitterion b.) Amphoteric nature (capable of reacting as both an acid and base) c.) Essential Amino Acids- complete vs. incomplete	READ: 16.1 CLTH: p. 555 & 557
4. For proteins, describe: a.) Their functions in the body b.) Denaturation c.) 1°, 2°, 3° & 4° structures d.) and linkages holding them together	READ: 16.2-16.3 CLTH: page 560 & 565 DO: 16.17-22, 25-28, 65,66

UNIT 5D

Chapter: 16 (16.4 – 16.8) and 18.2

Name of Unit: Enzymes and Digestion

Unit Objective: Describe how the body digests, absorbs, and distributes carbohydrates, triglycerides, and proteins.

LEARNING OBJECTIVES	OBTAINING THE OBJECTIVES
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1. For enzymes:

a) Describe their nomenclature and name the different classes.

b) Describe effect on activity of:

Substrate concentration

Enzyme concentration

Temperature

pH

c.) Understand cofactors

READ: 16.5-16.6

DO: 16.29-48, 56, 58

2. For digestion of carbohydrates, triglycerides, and proteins state:

a.) Enzyme involved

b.) What hydrolysis occurs mouth, stomach, and small intestine

c.) What end products are formed, absorbed, and stored (if at all)

READ: 16.5, 16.6, 18.2

DO: 16.7-12

Department Policies: Department Policies

1. Students must independently pass the Laboratory portion of the course. Passing is considered 65% or greater. Failing the laboratory portion of the course will result in an automatic Failing grade for the entire course.

2. Students who have missed 3 labs will automatically fail the Laboratory portion of the course which also means automatically failing the entire course. This also applies to fully online labs.

3. The chemistry department requires the use of Brookdale email. Upon registration all students receive a Brookdale email that remains active for months even after a student has finished courses. It is expected that all students will use their Brookdale email account or Canvas when communicating with instructors. Messages from personal email accounts will not be replied to once a class has started as it is impossible to authenticate identity.

4. Your final grade is not negotiable. Instructors will not engage in a repetitive back and forth conversation (either in person or electronically) with students at the end of or after the semester has ended. If you believe your final letter grade is in error, there is an appeals process that you can initiate a formal grade appeal.

5. The use of generative Artificial Intelligence (AI) in any chemistry course is strictly prohibited. The use of generative Artificial Intelligence will be considered a violation of Brookdale's academic integrity code and may result in severe penalties including automatic failure for the course.

6. Violations of the Academic integrity code will be prosecuted to the highest extent possible which includes the potential of an automatic failure for the course. High ethical standards are required in the Scientific, Medical, and Health Care fields and are taken very seriously. It is your responsibility to know and understand the academic integrity code; ignorance is not an excuse for an academic integrity violation. (The academic Integrity code can be found in the student handbook) ·

7. Students are at all times expected to abide by the student conduct code.

8. Students are required to either on paper or electronically acknowledge that they have reviewed both the department syllabus as well as their instructor's syllabus.

9. Students enrolled in remote or online sections are expected to have basic computer and technology equipment and skills that include but are not limited to: reliable internet, working web camera, ability to download Respondus lockdown browser and other programs, ability to save, edit, and submit documents in common file types.

10. Online students who repeat a course with a lab kit are required to have a full lab kit for the course

Tips on How to be successful

Chemistry is a unique subject. Often the strategies and techniques that prove to be successful in other disciplines are not as successful in chemistry. Below are ideas, techniques and strategies that will maximize your success in chemistry.

1. Don't procrastinate. Procrastination is the biggest reason why some individuals perform poorly in chemistry. Cramming and studying only on the weekend or the week before an exam does not work. It is very difficult to catch up if you have fallen behind, so

the best strategy is to ensure that you have not fallen behind in the first place. Chemistry is best done in small chunks of time but done frequently. After every class period (and before your next class period) you should be practicing the material that was just covered. Cramming material before a test is not effective for chemistry. If you find that you are spending more time studying the week before an exam than in previous weeks you have fallen behind.

2. Actively do problems. Chemistry is not mastered by watching your instructor in lecture or by passively reviewing notes or reading a textbook. Chemistry is mastered by independently doing problems. Content may “look easy” when it was presented to you in class or when you are reviewing your notes or the book, but you must actually do problems in order to ensure that you are capable of dealing with the content independently. It is recommended that 75 % of your studying time should be spent actively doing problems with the remaining 25 % in more passive studying techniques such as reviewing notes or rereading your book.

3. Get off to a good start. Just like in Math, Chemistry courses are very foundational. What is covered in Unit 1 is critical in future units as well as future courses. Doing poorly in unit 1 often leads to trouble in future units as those core principles covered in Unit 1 are used and built upon in future units. A poor performance in unit 1 will likely lead to a poor performance in future units, while a good performance in unit 1 paves the way for success in future units.

4. Take effective notes. Just writing down what an instructor writes on the board or copying what is on a PowerPoint slide is NOT effective note taking. Notes are supposed to be PERSONALIZED and contain things that help YOU understand the material. If your notes look identical or nearly identical to others in the class then they are NOT good notes as you haven’t personalized them. Notes are highly individual and should reflect what is useful to YOU in order to learn and retain material. They should contain things that the instructor may have said but not written, they should contain questions on things YOU are unsure about, they should contain YOUR own thoughts/words about the material. If your instructor supplies a base set of notes or PowerPoints in advance you should print them out in advance or download them so you can take YOUR PERSONALIZED notes directly on those base set of notes or PowerPoints.

5. Seek help as soon possible if you are struggling. Do not delay in seeking help if you are struggling. Delaying seeking help is a form of procrastination and will almost always lead to poor results. Since Chemistry is foundational and builds upon previous information it is crucial to get things corrected right away. Speak with your instructor right away. Your instructor has office hours and there are also other resources your instructor may be able to direct you to. Waiting until right before an exam to seek help is not useful as there is not enough time to fix the problems you are having.

Grading Standard: Upon completion of the course, grades will be assigned as follows:

A = 92 - 100%

A- = 89 - 91%

B+ = 86 - 88%

B = 82 - 85%

B- = 79 - 81%

C+ = 76 - 78%

C = 70 - 75%

D = 65 - 69%

F = <65%

In calculating the course grade, 0.5 will round up to the next numerical grade and 0.4 will round down to the next lower numerical grade.

College Policies:

As an academic institution, Brookdale facilitates the free exchange of ideas, upholds the virtues of civil discourse, and honors diverse perspectives informed by credible sources. Our College values all students and strives for inclusion and safety regardless of a student's disability, age, sex, gender identity, sexual orientation, race, ethnicity, country of origin, immigration status, religious affiliation, political orientation, socioeconomic standing, and veteran status. For additional information, support services, and engagement opportunities, please visit www.brookdalecc.edu/support.

For information regarding:

- Academic Integrity Code
- Student Conduct Code
- Student Grade Appeal Process

Please refer to the [student handbook](#) and [catalog](#).

Notification for Students with Disabilities:

Brookdale Community College offers reasonable accommodations and/or services to persons with disabilities. Students with disabilities who wish to self-identify must contact the Accessibility Services Office at 732-224-2730 (voice) or 732-842-4211 (TTY) to provide appropriate documentation of the disability and request specific accommodations or services. If a student qualifies, reasonable accommodations and/or services, which are appropriate for the college level and are recommended in the documentation, can be approved.

Mental Health:

24/7/365 Resources:

- Monmouth Medical Center Psychiatric Emergency Services at **(732) 923-6999**
- 2nd Floor Youth Helpline – Available to talk with you about any problem, distress, or hardship you are experiencing. Call or text at **888-222-2228** or visit the website at <https://www.2ndfloor.org/>

Faculty Counselors:

- Students who need to make an appointment with a faculty counselor can do so by calling 732-224-1822 (non-emergency line) during business hours. Faculty counselors are licensed mental health professionals who can assist students and refer them to other mental health resources.

Diversity Statement:

Brookdale Community College fosters an environment of inclusion and belonging. We promote a safe and open culture, encourage dialogue respecting diverse perspectives informed by credible sources, and uphold the virtues of civil discourse. We celebrate all identities with the understanding that ultimately, diversity, equity, and inclusion cultivate belonging and make us a stronger Brookdale community.

**The syllabus is intended to give student guidance in what may be covered during the semester and will be followed as closely as possible. However, the faculty member reserves the right to modify, supplement, and make changes as the need arise.*