Course Number and Title	CH 203 Fundamentals of Chemistry

Credit Hours	4

Course Description	Intended primarily for those who plan to work in a healthcare profession, this course introduces students to the composition, structure, properties, and change of matter. The course applies quantitative and qualitative reasoning to explore the properties of individual atoms; chemical bonding; characteristics of chemical compounds including their interactions through chemical reactions; gas laws; chemistry of solutions; and chemistry of acids and bases.

Prerequisite(s) and/or Corequisite(s)	MT 121 or MT 121E or MT 124A or minimum acceptable test scores for placement in college-level math (quantitative reasoning).

Required Textbooks/References/Course Materials:

Custom Lab Manual	2004		Thomson	0534271243
General, Organic and Biological Chemistry	7th	Stoker	Brooks / Cole	1285853911

	General Education Outcomes
1	Utilize written and verbal language to discuss and comprehend information, incorporating a variety of technologies, such as text, data, and images (written language, verbal language, and information technology).
2	Identify and interpret relevant information in order to formulate an opinion or conclusion (critical thinking).
3	Demonstrate and communicate computational methods and mathematical reasoning in a variety of formats (using words, tables, graphs, mathematical equations, etc., as appropriate) (quantitative literacy and fluency).
4	Communicate in appropriate ways with those who are culturally diverse (intercultural competence).

	Program/Department Outcomes
1	Students demonstrate a broad knowledge of science.
2	Students demonstrate how science processes work.
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	Course Outcomes (CO)	Bloom's Domain for CO (C, A, P), Category, and Level	Program/ Department Outcome(s)	Written Language	Verbal Language	Information Technology	Critical Thinking	Quantitative Literacy and Fluency	Intercultural Competence
1	Perform laboratory exercises while displaying safe laboratory practices	P – Manipulate (2)	1,2	0	0	0	0	1	0
2	Prepare laboratory reports	C – Applying (3)	1	1	0	0	2	1	0
3	Describe the general progression of modern chemistry over time	C – Remembering (1)	1,2	0	0	0	0	0	0
4	Use stoichiometry to determine outcomes of chemical reactions; predict products of selected reactions	C – Applying (3)	1	0	0	0	1	2	0
5	Solve the stoichiometry of limiting reactants	C – Applying (3)	1	0	0	0	1	2	0
6	Use solution chemistry to determine quantitative outcomes in aqueous environments	C – Applying (3)	1	0	0	0	1	2	0
7	Explain atomic structure in terms of Bohr Model and quantum mechanics	C – Understanding (2)	1	0	0	0	0	0	0
8	Explain the structure of the Periodic Table of the Elements in terms of electronic structure	C – Understanding (2)	1	0	0	0	0	0	0
9	Explain the intermolecular forces that govern the process of solution formation and colligative properties	C – Understanding (2)	1	0	0	0	0	0	0
10	Apply basic concepts of the localized electron model to chemical bonding and molecular geometry	C – Applying (3)	1	0	0	0	1	0	0
11	Solve gas law problems	C – Applying (3)	1	0	0	0	1	2	0
12	Apply the Kinetic-Molecular Theory to concepts of phase change	C – Applying (3)	1	0	0	0	1	0	0
13	Recognize and describe types of chemical reactions	C – Remembering (1)	1	0	0	0	0	0	0
14	Explain the Collision Theory of chemical reactions	C – Understanding (2)	1	0	0	0	0	0	0
15	Apply concepts of thermochemistry, equilibrium, temperature and catalysts to rates of reactions	C – Applying (3)	1	0	0	0	1	0	0
16	Solve qualitative and quantitative equilibrium problems	C – Applying (3)	1	0	0	0	1	2	0
17	Describe the dominant acid-base theories for aqueous solutions	C – Remembering (1)	1	0	0	0	0	0	0
18	Solve simple acid-base problems	C – Applying (3)	1	0	0	0	1	2	0
19	Apply concepts of acid-base chemistry to buffer solutions	C – Applying (3)	1	0	0	0	1	0	0

Bloom's Domain Legend
C = Cognitive
A = Affective
P = Psychomotor

General Education Outcome Legend
2 = Included and Measurable
1 = Introduced and/or Minimally Addressed and Not Measurable
0 = Not included

Approved: October 14, 2021
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