CHEM 1515 - General Chemistry 1

Fall 2026 Syllabus, Section 01, CRN 40701,

Credit hours: 3

Instructor

Brian D. Leskiw

Professional Qualifications:
Ph.D., Physical Chemistry, The Pennsylvania State University
B.S., Chemistry, Niagara University

Professor

Email: bdleskiw@ysu.edu

Office: Ward Beecher Hall 5046

Office Phone: (330) 941 – 1562

Additional Contact Methods:
Blackboard message board.

Preferred Contact Method: Email preferred.

How to Refer to me:
Dr. Leskiw or Prof. Leskiw

Course Description

1515. General Chemistry 1. An introduction to the fundamental principles of chemistry, including measurement and calculation; chemical stoichiometry; the properties of gases; atomic and molecular structure; bonding; thermochemistry; and periodic properties. Intended for majors in the natural sciences and engineering. Three hours lecture. Prereq.: "C" or better in CHEM 1501 or equivalent and "C" or better in MATH 1513 or "C" or better in MATH 1510 or "C" or better in MATH 1510C. Coreq.: CHEM 1515L. 3 s.h.

Course Readings

Group	Title	Author	ISBN
Required	Chemistry, A Molecular Approach, 6th Edition	N. Tro	9780137832217

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Schedule of Topics and Assignments

Day	Date	Reading(s)	Proposed Topic	Due/To Prepare for Class
Mon	8/24	Chapter 1	Introduction; Measurement, Significant Figures	Suggested Exercises: 1:33,37,41,45,47,53,57,59,61,71,81,85,87,89,91,93,95,101
Wed	8/26	Chapter 1	Significant Figures, Properties, Scientific Method	
Fri	8/28	Chapter 1	Temperature, Density, Dimensional Analysis	
Mon	8/31	Chapter 2	Atomic Theory, Periodic Table, Ions	Suggested Exercises: 2:29,49,53,55,57,61,63,65,73,75,89,91,93,95,99,101,115
Wed	9/2	Chapter 2	Atomic/Molar Mass, Bonding	
Fri	9/4	Chapter 2/3	Bonding & Formulas, Nomenclature	
Mon	9/7	No Class		

Wed	9/9	Chapter 3	Nomenclature	Suggested Exercises: 3:29,31,35,37,39,43,45,47,53,55,67,69,71,75,79,89,97,103
Fri	9/11	Chapter 3	Nomenclature, Formula Mass, Mole	
Mon	9/14	Chapter 3	Mole, % Composition	
Wed	9/16	Chapter 3/4	Balancing Reactions, Stoichiometry	
Fri	9/18	Chapter 4	Stoichiometry	Suggested Exercises: 4:25,29,31,43,47,51,53
Mon	9/21	Chapter 4	Limiting Reagents, % Yield	
Wed	9/23	Chapter 5	Reactions, Electrolytes, Molarity	Suggested Exercises: 5:21,25,27,29,31,37,39,45,55,69,73
Fri	9/25		EXAM 1: Chapters 1, 2, 3, 4	
Mon	9/28	Chapter 5	Oxidation/Reduction, Titration	
Wed	9/30	Chapter 6	Gases, Pressure	Suggested Exercises: 6:33,37,43,45,59,61,65,79,81,89,107
Fri	10/2	Chapter 6	Gas Laws, Ideal Gases	
Mon	10/5	Chapter 6	Gas Density, Mole Fraction, Partial Pressure	
Wed	10/7	Chapter 6	Kinetic-Molecular Theory	
Fri	10/9	Chapter 6	Effusion, Real Gases	
Mon	10/12	Chapter 7	Thermochemistry, Systems	Suggested Exercises: 7:43,49,65,69,81,85,87,89,91
Wed	10/14	Chapter 7	Calorimetry, Enthalpy	
Fri	10/16	Chapter 7	Enthalpy, Heats of Formation, Hess' Law	
Mon	10/19	Chapter 8	Light, Electromagnetic Radiation, Bohr Model	Suggested Exercises: 8:39,41,47,59,61,63,65
Wed	10/21	Chapter 8	H-atom, Orbitals	
Fri	10/23		EXAM 2: Chapters 5, 6, 7	
Mon	10/26	Chapter 8	Orbitals, Quantum numbers	
Wed	10/28	Chapter 8	Quantum numbers, Electron Configurations	
Fri	10/30	Chapter 8	Electron Configurations, Aufbau principle	
Mon	11/2	Chapter 8/9	Ground/Excited State, Periodic Trends	
Wed	11/4	Chapter 9	Periodic Trends, Bonding	Suggested Exercises: 9:39,41,47,51,53,63,65,69,73,75,79,99
Fri	11/6	Chapter 10	Lewis Symbols, Lewis Structures, Octet Rule	Suggested Exercises: 10:37,39,55,57,63,79
Mon	11/9	Chapter 10	Lewis Structures, Electronegativity, Polarity	
Wed	11/11	No Class		
Fri	11/13	Chapter 10	Formal Charge, Bond Enthalpy	
Mon	11/16	Chapter 11	VSEPR Theory, Molecular Geometry	Suggested Exercises: 11:35,39,41,47,49,59,61
Wed	11/18	Chapter 11	Molecular Geometry, Polarity	
Fri	11/20		EXAM 3: Chapters 8, 9, 10	
Mon	11/23	Chapter 11	Molecular Geometry, Polarity	
Wed	11/25	No Class		
Fri	11/27	No Class		
Mon	11/30	Chapter 11	Valance-Bond Theory, Hybridization	
Wed	12/2	Chapter 11	Molecular Orbital Theory	
Fri	12/4		Review	
Mon	12/7	No Class		
Wed	12/9	No Class		
Fri	12/11	8:00 - 10:00 a.m.	Final Exam (Comprehensive)	

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