

CHEM 1500 - Chemistry in Modern Living

Fall 2026 Syllabus, Section 01, CRN 40024,

Credit hours: 3

Instructor

Jennifer Decker

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Public Instructor Information

Instructor Title: Dr. Decker

Instructor Professional Qualifications: *Ph.D., Physical Chemistry, Pennsylvania State University*

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Course Description

1500. Chemistry in Modern Living. Introduction to basic chemical concepts, the scientific method, and the impact of chemistry on human life and society. Examples may include water treatment, air quality, plastics, drugs, cosmetics, energy resources, food, and the chemical basis of life. Not intended for Chemistry majors. 3 s.h.

Course Readings

Group	Title	Author	ISBN
Required			

Achieve Learning Waldron 21st Century Chemistry, 2nd edition ISBN: 9781319256586. It comes with an e-book and an access to the required homework

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	Proposed Topic	Due/To Prepare for Class
Tue	8/25	Introduction. Chapter 1: Scientific Method, Scientific Notations	Practice Assignment HW: 8/24-9/6
Thu	8/27	Chapter 1: Metric Units, Significant Figures	
Tue	9/1	Chapter 1: Conversion Factors, Accuracy and Precision	Chapter 1 HW: 8/24-9/6 Discussion Board Question: 9/2
Thu	9/3	Chapter 2: Atoms, Isotopes	Discussion Board (DB) Answers: 9/4
Tue	9/8	Chapter 2: Electrons, Light	Chapter 2 HW: 8/24-9/13 DB Question: 9/9
Thu	9/10	Chapter 3: Periodic Table, Elements and Compounds	DB Answers: 9/11
Tue	9/15	Chapter 3: Pure Substances and Mixtures, States of Matter	Chapter 3 HW: 8/24-9/20 DB Question: 9/16
Thu	9/17	Review for Exam 1	DB Answers: 9/18
Tue	9/22	Exam 1 (Chapters 1,2,3)	
Thu	9/24	Chapter 4: Octet Rule, Valence Electrons	
Tue	9/29	Chapter 4: Ionic Bonds, Ionic Compounds; Metal Bonding	DB Question: 9/30

Thu	10/1	Chapter 4: Covalent Bonds and Polarity, Prediction of Types of Bonds from Periodic Table	Chapter 4 HW: 9/22-10/7 DB Answers: 10/2
Tue	10/6	Chapter 7: Chemical Equations, Balancing Chemical Equations, Mole, Molar Mass	DB Question: 10/7
Thu	10/8	Chapter 7: Stoichiometry, Endothermic and Exothermic Reactions, Catalyst	Chapter 7 HW: 9/22-10/14 DB Answers: 10/9
Tue	10/13	Review for Exam 2	
Thu	10/15	Exam 2 (Chapters 4, 7)	
Tue	10/20	Chapter 6: Properties of Gas, Effect of Volume, Temperature, Pressure, and Moles on Gas Behavior (Gas Laws)	DB Question: 10/21
Thu	10/22	Chapter 6: Gas Laws	Chapter 6 HW: 10/15-11/1 DB Answers: 10/23
Tue	10/27	Chapter 8: Hydrogen Bonds and Dipole-Dipole Interactions	DB Question: 10/28
Thu	10/29	Chapter 8: Heating Curve of Water	Chapter 8 HW: 10/15-11/8 DB Answers: 10/30
Tue	11/3	Chapter 9: Salts are Ionic Compounds, Polyatomic Ions,	DB Question: 11/4
Thu	11/5	Chapter 9: Hydration, Solutions, Electrolytes	DB Answers: 11/6
Tue	11/10	Chapter 9: Concentration (Molar, % m/m), Osmosis	Chapter 9 HW: 10/15-11/15 DB Question: 11/11
Thu	11/12	Review for Exam 3	DB Answers: 11/13
Tue	11/17	Exam 3 (Chapters 6, 8, 9)	
Thu	11/19	Chapter 10: Autoionization of Water, Acids and Bases	
Tue	11/24	Chapter 10: pH Scale, Calculation of pH, Common Air Pollutants	Chapter 10 HW: 11/17-12/2
Thu	11/26		
Tue	12/1	Chapter 5: Organic Molecules; Hydrocarbons	DB Questions: 12/2
Thu	12/3	Chapter 5: Functional Groups (hydrocarbons with single, double, and triple carbon-carbon bonds, carboxylic acids, alcohols, sulfides, amines) Course Review	Chapter 5 HW: 11/17-12/6 DB Answers: 12/4
Tue	12/8		
Thu	12/10	FINAL EXAM: 8:00-10:00AM	

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.