CHM2046 GENERAL CHEMISTRY II FALL 2025

CREDIT HOURS: 3 GEN ED (P)

INSTRUCTOR INFORMATION

Instructor	Email/Office/Phone	Office Hours
Professor Ashlyn R. E. Hale Class days: T Period 6, R Periods 6-7 T Period 8, R Periods 8-9 Room: CLB-C130	Email in Canvas preferred, Ashlyn.rose.hale@chem.ufl.edu CLB 412D 294-3661 Class Numbers T6, R6-7: 10619, 10620, 10638, 10639, 10640, 10641, 10642, 10643 Class Numbers T8, R8-9: 24449, 25993, 25994, 25996, 25997, 25998, 25999, 25600	T Period 8 W Periods 6,7

COURSE DELIVERY/MEETING TIMES

The course is delivered in a face-to-face format. See instructor information for course meeting times.

Room: CLB-C130. Class days: T, R

Discussion sections: Wednesdays, exact time and location depends on the section.

Exams are evening assembly exams, on campus, rooms TBA, periods E2-E3. Dates are listed in the course schedule below.

COURSE FEES/CREDIT HOURS

Additional Course Fees: $1.49. Course fees cover exam processing and printing. Credit Hours: 3.

REQUIRED/RECOMMENDED COURSE MATERIALS

TEXTBOOK

Required text: Chemistry: The Molecular Nature of Matter and Change (10th edition), by Martin Silberberg and Patricia Amateis, McGraw Hill.
Note: See Canvas page for instructions on how to access the ebook with UF ALL ACCESS.

CALCULATOR (REQUIRED, MUST PURCHASE)

You will require a calculator capable of logarithmic functions that you must provide for yourself. For exams and quizzes, the calculator must be non-graphing and non-programmable.

GENERAL INFORMATION

PREREQUISITES

Prerequisites: (CHM2045 or CHM2095 or CHM2050 all with a minimum grade of C) and (MAC1147 or MAC1140 and MAC1114 all with a minimum grade of C).

COURSE DESCRIPTION AND GOALS

Objective: To introduce general chemistry concepts and problem-solving skills and their relationship to advanced topics in science and engineering.

Second semester of the CHM 2045-2045L-2046-2046L sequence. Students who completed 2045 (or equivalent) at another institution should consult with a chemistry academic advisor before registering for this course. Acids and bases, additional aspects of chemical equilibria, thermodynamics, electrochemistry, complex ions and descriptive chemistry. This course affords students the ability to critically examine and evaluate the principles of the scientific method, model construction, and use the scientific method to explain natural experiences and phenomena.

As both a general education requirement and major's course CHM 2046 serves to teach the scientific method, skills for problem solving, general chemistry knowledge, and connections to the principles that govern the natural world.

Specifically, students will be able to:

1. Clearly communicate in writing information derived from course-related readings/lectures about the major concepts and themes in the chemical sciences.
2. Apply knowledge of the fundamental principles of chemical, acid/base and aqueous equilibria to perform related calculations and make predictions of system behavior.
3. Describe and apply the fundamental principles of thermodynamics and electrochemical systems.
4. Describe the properties of complex ions and coordination compounds. Identify the importance of elements in nature and industry.
5. Analyze chemical principles in advanced applications.

GENERAL EDUCATION OBJECTIVES AND LEARNING OUTCOMES

Primary General Education Designation: Physical Sciences (P) (area objectives available here)

General Education Designation: Physical Sciences (P): Natural Science courses afford students the ability to critically examine and evaluate the principles of the scientific method, model construction, and use the scientific method to explain natural experiences and phenomena. Physical Science (P) is a sub-designation of Natural Science courses at the University of Florida. These courses provide instruction in the basic concepts, theories and terms of the scientific method in the context of the physical sciences. Courses focus on major scientific developments and their impacts on society, science and the environment, and the relevant processes that govern physical systems. Students will formulate empirically testable hypotheses derived from the study of physical processes, apply logical reasoning skills through

scientific criticism and argument, and apply techniques of discovery and critical thinking to evaluate outcomes of experiments.

A minimum grade of C is required for general education credit. Courses intended to satisfy the general education requirement cannot be taken S/U.

The course objectives align with the UF General Education student learning outcomes and physical science area learning outcomes:

General Education SLO	Physical Science SLO	Course Objective Alignment	Assessment
Content	Identify, describe, and explain the basic concepts, theories and terminology of natural science and the scientific method; the major scientific discoveries and the impacts on society and the environment; and the relevant processes that govern biological and physical systems.	Objectives 2-6	All assessments and student practice assignments offer opportunities for students to demonstrate content knowledge.
Critical Thinking	Formulate empirically-testable hypotheses derived from the study of physical processes or living things; apply logical reasoning skills effectively through scientific criticism and argument; and apply techniques of discovery and critical thinking effectively to solve scientific problems and to evaluate outcomes.	Objectives 1-6	Homework, quizzes, exams.
Communication	Communicate scientific knowledge, thoughts, and reasoning clearly and effectively.	Objective 1-6	Weekly discussion class, worksheets.

COURSE COMMUNICATIONS

GENERAL QUESTIONS

General course questions should be posed to your instructor during office hours, or to TAs during their office hours or during discussion sessions.

e-Learning: We will use the Canvas e-learning site (http://elearning.ufl.edu) to provide other class materials, convey announcements and track grades.

PRIVATE OR GRADE-RELATED QUESTIONS

Direct these to your instructor via **the mail function in Canvas**. **Do not email outside of Canvas to your instructor's UF email address – the General Chemistry program prefers not to discuss grade-related questions outside of Canvas.** You will be asked to resend the query through Canvas. Instructor response time to email queries is <48 h during the workweek, or the first business day for emails received Friday or over the weekend.

TEACHING ASSISTANTS

TBA

The Academic Resources Center offers free virtual tutoring assistance. See their website for details.

GRADING

GRADE POLICY

There is no extra credit available for this course. Grades are not rounded at the end of term. Exam grades or course grades are not curved. Current UF grading policies for assigning grade points can be found in the catalog.

A minimum grade of C is required for general education credit. Courses intended to satisfy the general education requirement cannot be taken S/U.

Tentative assignment weights are as follows:

Assignment Group	Points
Progress Exams	600 (2 best scores plus an average-replace score – see Exams section below)
Quizzes	120 (3 total, 40 each)
Discussion Worksheets	80 (8 total, 10 each)
Final Cumulative Exam	200
TOTAL	1000

Grade scale (note: there is no rounding to your score in Canvas):

Letter	A	A-	B+	B	B-	C+	C	C-	D+	D	E
Cutoff	850	820	780	750	720	680	650	620	580	550	< 550

COURSE POLICIES

SUGGESTED READINGS AND HOMEWORK

Detailed agendas, including topics to be covered, suggested reading, and suggested practice questions and problems will be provided approximately every two weeks. These agendas will also announce the range of material to be included on each quiz and test. Answers to the homework problems will be posted on the Canvas site. Homework will not be graded, but quizzes and tests will closely follow assigned homework questions. **Working on homework with a partner or in groups is strongly encouraged.**

DISCUSSION SECTIONS AND WORKSHEETS

Discussion sections will be used for scheduled quizzes and team worksheets, which earn points toward your course grade. Discussion sections also provide an opportunity for questions and clarifications on homework problems, reading, and lecture content. **Participation during discussion is expected for full credit on team worksheets.**

Rubric Components	Student will receive 0 or 5 per component
The student actively participated in the discussion section.	5
The student completed the worksheet and had the answers checked by a TA and/or the student attempted to complete the worksheet during the whole discussion period.	5

QUIZZES

There will be **three quizzes that will be given** during the Wednesday discussion sections. They are timed to also help you prepare for the Exams. Students must work independently and follow the honor code. You are permitted use of a non-graphing non-programmable scientific calculator. Notes, cell phones or other electronic devices are not permitted.

EXAMS

Exams occur in the evenings, periods E2-E3, in exam rooms TBA. Exam Dates are provided in the schedule listed below in this syllabus document. You are permitted use of a non-graphing non-programmable scientific calculator. Notes, cell phones or other electronic devices are not permitted. Scantrons and blank paper are provided. Students must work independently and follow the honor code.

PROGRESS EXAM POLICY

This policy applies to all students. No progress exam score will be dropped for any reason. To alleviate the stress of potential issues that do not fall under officially sanctioned absences, we have incorporated an “average/replace” policy: the lowest of the three progress exams will be replaced by the average of the three progress exams. This policy helps to minimize the impact of a single poor exam performance (it will not disappear, but will be minimized). For example, if a student scores the following on their three 200-point progress exams: 180, 140, and 40 points, the 40-point exam score will be replaced with the average of 180, 140, and 40, which is 120, a much better score than a 40/200.

A 10% penalty (or 20 points) will be applied if you fail to bubble in a form code on the scantron or do not take the exam in the assigned room.

POSTED GRADE DISPUTES

Should a student wish to dispute any grade received in this class, the dispute must be in writing (via Canvas e-mail to *your* instructor) and cannot be submitted via email to the instructor. Missing grades must be disputed before the last day of classes.

ATTENDANCE, EXTENSION REQUESTS

All due dates for assignments are clearly posted in the course assignments of the Canvas page and reflect the most up-to-date information. The deadline for assignments is 11:59 p.m. on the day stated on the lecture schedule. All assignments/quizzes must be completed by the stated due date and time for credit. Extensions for assignments (exams are covered under the General Chemistry Exam Absence Policy) can be requested due to illness or emergency situations.

You may be asked to have provide an excuse note from the Dean of Students Office UF CARE team before such an extension is considered. Information on requesting an excuse note can be found here: https://care.dso.ufl.edu/instructor-notifications/

An excuse documenting illness or a personal matter must be provided for at least 50% of the days allocated for completion of the assignment (for example, if the duration of a Module is six days, documentation of illness or a personal matter should be provided for at least three of those days) for accommodations to be considered. Extensions will NOT be given because of technical or personal issues that occur within 24 hours of the assignment deadline.

Exam dates are firm and are in the schedule below. All assignments must be completed by the last day of term. Exam absences are handled in accordance with official UF academic regulations.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/

See below for further clarification for two different types of situations.

1. Conflicts with other events: acceptable reasons include religious holidays, military obligations, special curricular requirements (e.g., attending professional conferences), or participation in official UF-sanctioned activities such as athletic competitions, etc. For more information on such absences see the official UF Policy at https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/#absencestext). If you must be absent for an exam due to a documented and approved conflict known in advance, you must e-mail your instructor (within Canvas) the documentation at least one week prior to the scheduled exam and an early conflict exam will be scheduled for you.

2. Missing an exam due to an emergency or sudden illness: If you are absent for an exam due to an unpredicted documented medical reason or family emergency, you must contact the instructor as soon as possible and provide documentation of the emergency. Your instructor will follow UF academic regulations in evaluating the notification and/or documentation received from you or from the DSO on your behalf. Once your instructor is satisfied with the validity of your exam absence a make-up exam will be scheduled after a reasonable amount of time, i.e., before the end of the semester.

UNIVERSITY POLICIES

STUDENTS REQUIRING ACCOMMODATIONS

Students who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center (DRC) by visiting https://disability.ufl.edu/get-started/. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Accommodations are not retroactive, therefore, students should contact the DRC office as soon as possible in the term for which they are seeking accommodations.

We will utilize the DRC for administering accommodations for all quizzes and tests.

UNIVERSITY HONOR POLICY

University of Florida students are bound by the Honor Pledge. On all work submitted for credit by a student, the following pledge is required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Student Honor Code and Conduct Code (Regulation 4.040) specifies a number of behaviors that are in violation of this code, as well as the process for reported allegations and sanctions that may be implemented. All potential violations of the code will be reported to Student Conduct and Conflict Resolution. If a student is found responsible for an Honor Code violation in this course, the instructor will enter a Grade Adjustment sanction which may be up to or including failure of the course. For additional information, see https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/.

IN-CLASS RECORDING

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor. A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session. Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

CAMPUS RESOURCES

U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.

Counseling and Wellness Center: Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.

Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website.

University Police Department: Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).

UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the UF Health Emergency Room and Trauma Center website.

GatorWell Health Promotion Services: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the GatorWell website or call 352-273-4450.

ACADEMIC RESOURCES

- E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.
- Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
- Library Support: Various ways to receive assistance with respect to using the libraries or finding resources.
- Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.
- Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

UF COURSE EVALUATION PROCESS

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online. Students can complete evaluations in three ways:

1. The email they receive from GatorEvals
2. Their Canvas course menu under GatorEvals
3. The central portal at https://my-ufl.bluera.com

Guidance on how to provide constructive feedback is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

PROCEDURE FOR CONFLICT RESOLUTION

Any classroom issues, disagreements or grade disputes should be discussed first between the instructor and the student. If the problem cannot be resolved, please contact the Director of General Chemistry, Melanie Veige (genchem@chem.ufl.edu). Be prepared to provide documentation of the problem, as well as all graded materials for the semester. Issues that cannot be resolved departmentally will be referred to the University Ombuds Office (http://www.ombuds.ufl.edu; 352-392-1308) or the Dean of Students Office (http://www.dso.ufl.edu; 352-392-1261).

GETTING HELP

For technical difficulties with Canvas, contact the UF Help Desk: https://lss.at.ufl.edu/help.shtml; (352)-392-HELP.

OVERVIEW OF COURSE SCHEDULE

Holidays: Sep 1, Oct 17, Nov 11, Nov 24-28 Reading Days: Dec 4-5

See Assigned Reading Schedule below the Course Schedule for reading length and workload time estimations.

Week	Worksheet/Quiz/Test	Topics	Silberberg Chapters*
1 (Aug 21-22)	**none**	Intro, Kinetics review, Equilibrium	Chap. 16.5, 17
2 (Aug 25-29)	**Worksheet 1**	Equilibrium	Chap. 17
3 (Sep 1-5)	**Quiz 1 (Sep 3/4)**	Equilibrium & Acid-Base Equilibria	Chap. 17, 18
4 (Sep 8-12)	**Worksheet 2**	Acid-Base Equilibria	Chap. 18
5 (Sep 15-19)	**Worksheet 3** **Progress Exam 1** **Friday Sep 19** **(8:20pm-10:20pm)**	Acid-Base Equilibria & Buffers	Chap. 18,19
6 (Sep 22-26)	**Worksheet 4**	Buffers and Acid-Base Titration	Chap 19
7 (Sep 29 – Oct 3)	**Quiz 2 (Oct 1/2)**	Equilibria of Ionic Solids and Complex Ions & Thermodynamics	Chap 19, 20
8 (Oct 6 – 10)	**Worksheet 5**	Thermodynamics	Chap 20
9 (Oct 13-17)	**Progress Exam 2** **Thursday Oct 16** **(8:20pm-10:20pm)**	Thermodynamics & Electrochemistry	Chap 20, 21
10 (Oct 20-24)	**Worksheet 6**	Electrochemistry	Chap 21
11 (Oct 27-Oct 31)	**Quiz 3 (Oct 29/30)**	Electrochemistry & Main group elements	Chap 20, 14
12 (Nov 3 – 7)	**Worksheet 7**	Main group elements	Chap 14
13 (Nov 10-14)	**Progress Exam 3** **Friday Nov 14** **(8:20pm-10:20pm)**	Main group elements	Chap 14
14 (Nov 17-21)	**Worksheet 8**	Transition Metals	Chap 23
15 (Nov 24-28)	**none**	**No classes (Thanksgiving)**	
16 (Dec 1-5)	**Discussion (review)**	Transition Metals	Chap 23
December 6	**Final Exam** **Saturday Dec 6** **(8:00 pm - 10:00 pm)**	Cumulative	Cumulative

SCHEDULE OF LECTURES WITH ASSIGNED READINGS

Class Date T/R sections	Topics	Estimated time/pages in Silberberg 10th ed.
Aug 21 (R)	Intro/syllabus, Kinetics review Equilibrium	Ch 16.5, 16.7 (711-718,725-729; 30 min) Ch 17.1-17.3 (745-756; 30 min)
Aug 26 (T)	Equilibrium	Ch 17.4, 17.5 (756-769, 1 hour)
Aug 28 (R, 1 period)	Equilibrium	Ch 17.5 (759-769, 45 min)
Sep 2 (T)	Equilibrium	Ch 17.6 (769-781, 1 hour)
Sep 4 (R)	Acid-Base Equilibria Acid-Base Equilibria	Ch 18.1-3 (796-806, 45 min) Ch 18.3-18.4 (802-804, 35 min)
Sep 9 (T)	Acid-Base Equilibria	Ch 18.5 (808-815, 1 hour)
Sep 11 (R)	Acid-Base Equilibria Acid-Base Equilibria	Ch 18.7-18.8 (820-830, 35 min) Ch 18.5-18.6 (815-820, 30 min)
Sep 16 (T)	Acid-Base Equilibria	Ch 18.8-18.10 (825-835, 1 hour)
Sep 18 (R)	Buffers	Ch 19.1-19.2 (849-861, 75 min)
Sep 23 (T)	Buffers, Acid-Base Titration	Ch 19.2-19.3 (851-869, 1.5 hours)
Sep 25 (R)	Acid-Base Titration, Indicators Equilibria of Ionic Solids	Ch 19.3 (870-874, 30 min) Ch 19.4 (874-887, 1 hour)
Sep 30 (T)	Equilibria of Complex Ions	Ch 19.5 (889-892, 30 min)

Oct 2 (R)	Thermochemistry review, Thermodynamics Thermodynamics	Ch 6 (review if needed), Ch 20.1 (907-918, 45 min) Ch 20.1-20.2 (907-922, 30 min)
Oct 7 (T)	Thermodynamics	Ch 20.2-20.3 (918-933, 1 hour)
Oct 9 (R)	Thermodynamics Thermodynamics	Ch 20.3 (923-933, 1 hour) Ch 20.4 (933-939, 35 min)
Oct 14 (T)	Electrochemistry	Ch 21.1 (951-956, 45 min)
Oct 16 (R)	Electrochemistry Electrochemistry	Ch 21.2 (956-961. 30 min) Ch 21.3 (961-970, 1 hour)
Oct 21 (T)	Electrochemistry	Ch 21.4 (970-978, 1 hour)
Oct 23 (R)	Electrochemistry Electrochemistry	Ch 21.7 (984-994, 1.5 hours) Ch 21.5-21.6 (978-984 45 min)
Oct 28 (T)	Main group elements	Ch 14.1-3 (581-588, 40 min)
Oct 30 (R)	Main group elements	Ch 14.1-3 (581-588, 40 min) Ch 14.4-5 (588-594, 35 min)
Nov 4 (T)	Main group elements	Ch 14.4-5 (588-594, 35 min)
Nov 6 (R)	Main group elements Main group elements	Ch 14.6 (594-599, 30 min) Ch 14.7 (599-607, 45 min)

Nov 13 (R)	Main group elements Transition Metals	Ch 14.8-14.9 (607-616, 45 min) Ch 23.1 (1047-1054, 35 min)
Nov 18 (T)	Transition Metals	Ch 23.3 (1056-1065, 1.5 hours)
Nov 20 (R)	Transition Metals Transition Metals	Ch 23.3 (1056-1065, 1.5 hours) Ch 23.4 (1065-1076, 1 hour)
Dec 2 (T)	Transition Metals	Ch 23.4 (1065-1076, 1 hour)

COURSE TOPICS

The following list details topics that are covered in this course:

Chapter 17: Equilibrium: The Extent of Chemical Reactions

- 17.1 The Equilibrium State and the Equilibrium Constant
- 17.2 The Reaction Quotient and the Equilibrium Constant
- 17.3 Expressing Equilibria with Pressure Terms: Relation Between Kc and Kp
- 17.4 Comparing Q and K to Determine Reaction Direction
- 17.5 How to Solve Equilibrium Problems
- 17.6 Reaction Conditions and Equilibrium: Le Chatelier's Principle

Chapter 18: Acid-Base Equilibria

- 18.1 Release of H+ and OH- and the Arrhenius Definition
- 18.2 Proton Transfer and the Bronsted-Lowry Acid-Base Definition
- 18.3 Autoionization of Water and the pH Scale
- 18.4 Strong Acids and Bases and pH Calculations
- 18.5 Weak Acids and their Equilibria Calculations
- 18.6 Molecular Properties and Acid Strength
- 18.7 Weak Bases and their Relation to Weak Acids
- 18.8 Acid-Base Properties of Salt Solutions
- 18.10 Electron-Pair Donation and the Lewis Acid-Base Definition

Chapter 19: Ionic Equilibria in Aqueous Systems

- 19.1 The Common-ion Effect
- 19.2 Equilibria of Acid-Base Buffers
- 19.3 Acid-Base Titration Curves
- 19.4 Equilibria of Slightly Soluble Ionic Compounds
- 19.5 Equilibria Involving Complex Ions

Chapter 20: Thermodynamics: Entropy, Free Energy, and Reaction Direction

- 20.1 The Second Law of Thermodynamics: Predicting Spontaneous change
- 20.2 Calculating the Change in Entropy of a Reaction
- 20.3 Entropy, Free Energy, and Work
- 20.4 Free Energy, Equilibrium, and Reaction Direction

Chapter 21: Electrochemistry: Chemical Change and Electrical Work

- 21.1 Oxidation-Reduction Reactions
- 21.2 Voltaic Cells: Using Spontaneous Reactions to Generate Electrical Energy
- 21.3 Cell Potential: Output of a Voltaic Cell
- 21.4 Free Energy and Electrical Work
- 21.5 Electrochemical Processes in Batteries

21.6 Corrosion: An Environmental Voltaic Cell

21.7 Electrolytic Cells: Using Electrical Energy to Drive Nonspontaneous Reactions

Chapter 14: Periodic Patterns in the Main-Group Elements

14.1 Hydrogen: The Simplest Atom

14.2 Trends Across the Periodic Table: The Period 2 Elements

14.3 Group 1: The Alkali Metals

14.4 Group 2: The Alkaline Earth Metals

14.5 Group 13: The Boron Family

14.6 Group 14: The Carbon Family

14.7 Group 15: The Nitrogen Family

14.8 Group 16: The Oxygen Family

14.9 Group 17: The Halogens

Chapter 23: Transition Elements and their Coordination Compounds

23.1 Properties of the Transition Metals

23.2 The Inner Transition Elements

23.3 Coordination Compounds

23.4 Theoretical Basis for the Bonding and Properties of Complex Ions

DISCLAIMER

Unforeseen circumstances including university closure (weather related, etc.) may necessitate a schedule adjustment. Any changes are communicated promptly to students.