

MacArthur Chemistry 2 Pacing Guide 2026-27

Semester 1

1	CHEM2.PS1.1	Electron configurations, periodic trends
2	CHEM2.PS1.2	Composition of compounds (empirical/molecular formulas)
3	CHEM2.PS1.3	Crystalline vs amorphous solids
4	CHEM2.PS1.4	Dalton's Law, diffusion vs effusion
5	CHEM2.PS1.5	Ideal & combined gas laws, STP/non-STP stoichiometry
6	CHEM2.PS1.6	Van der Waals equation and real gases
7	CHEM2.PS1.7	Raoult's Law, freezing point depression, boiling point elevation
8	CHEM2.PS1.8	Polymers, carbon bonding
9	Review & Assessment	Unit 1-8 Review and Exam
10	CHEM2.PS1.9	Naming and drawing hydrocarbons, functional groups
11	CHEM2.PS1.10	Structure/function of carbon in society
12	CHEM2.PS1.11	Solubility rules, net ionic equations
13	CHEM2.PS1.12	Redox reactions, half-reactions, balancing in acid/base
14	CHEM2.PS1.13	Electrochemistry, batteries, electrochemical cells
15	CHEM2.PS1.14	Titrations, K_a/K_b , pH at equivalence point
16	CHEM2.PS1.15	Chemical reactions (bio and chemical), qualitative & quantitative
17	CHEM2.PS1.16	Atomic substructure (quarks, gluons, etc.)
18	Review & Midterm	Semester review and midterm exam

Semester 2

Week	Topics / Standards	Focus Areas
19	CHEM2.PS2.1	Intermolecular forces in pure substances & mixtures

20	CHEM2.PS2.2	Molecular forces & electron distribution
21	CHEM2.PS2.3	Reaction rates and molecular collisions
22	CHEM2.PS2.4	Rate equations & rate laws
23	CHEM2.PS2.5	Equilibrium expressions, Q vs K, ICE tables
24	CHEM2.PS2.6	Strong vs weak acids/bases, pH, percent ionization
25	CHEM2.PS2.7	Buffer systems, Henderson-Hasselbalch, polyprotic acids
26	Review & Assessment	Unit 19–25 Review and Exam
27	CHEM2.PS3.1	Hess's Law, enthalpy changes
28	CHEM2.PS3.2	Gibbs Free Energy and spontaneity
29	CHEM2.PS3.3	Fuel cell model – project-based
30	CHEM2.PS3.4	Conservation of matter, law of definite proportions
31	CHEM2.PS3.5	Coulomb's law, ionization energy, reactivity
32	CHEM2.PS3.6	Bond energy, bond length, potential energy
33	CHEM2.PS3.7	Energy in biological systems (photosynthesis, respiration)
34	CHEM2.PS3.8	Pyrotechnics design project – thermodynamics & kinetics
35	CHEM2.PS4.1-2	Spectra, absorption/emission, $C=\lambda\nu$, $E=h\nu$
36	Final Review & Exam	Comprehensive Final Exam