# CHEMISTRY 504: Simplified Curriculum Map

# Competencies: 1—Practical (performs & reports lab activities) , 2—Theory (Makes use of knowledge)

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| **Title:** | **Review** | **Measurement** | **Gas Laws** | **Heat and Energy** | **Review of first semester** |
| Time Line: | September (2 weeks) | September (end) | October  | November  | December |
| Essential Question: | How do we measure and calculate in Chemistry? | What are the properties and particles of matter? | How do gases react to changes, and how does this relate to particles? | How do the properties of gases change relative to the conditions | How does the release and absorption of energy happen in reactions? |
|  | Significant figuresAlgebra & math formulaeSolving problemsExperimental error calculations | Review of ScienceAtoms, molecules, formulaeBalancing equationsThe moleStoichiometry | Properties of gasesCommon gases & their usesKinetic Theory of gases | General gas lawsBoyle’s, Charles’, Gay-Lussack’s & Avogadro’s lawsThe General Gas LawThe ideal gas constantThe Ideal gas law | Endo/exothermic reactionsCalorimetryEnthalpy & graphsMolar Heat of reaction |
| Overview | 6 lessons,1 lab (density)1 quiz | 5 lessons, 1 lab (Stoichiometry)1 test (C2:) | 9 lessons,  (Demo: Diffusion)1 Test (Kinetic Theory) | 11 lessons, Lab (Boyle’s Law)Test (gas laws) | 10 Lessons2 labs (endo/exothermic) (heat of reaction) |
| ~Periods(50 min) | 6 | 6 | 10 | 12 | 10 |
|  |  |  |  |  |  |
| **Title:** | **Review for Mid-year** | **Rates of Reaction** | **Equilibrium** | **Acid Base Reactions** | **Review** |
| Time Line: | January | February  | March | April | May |
| Essential Question: | How do I pass my mid-term? | What factors affect the speed of a reaction? | What is chemical equilibrium? | How do acids and bases maintain an equilibrium? | How do I pass my exam? |
|  | Finish heat of reactionReview for mid-year exam, catch up on missing work,Make up for lost time. | Measuring & graphing rates of reaction | Forward and reverse reactionsEquilibrium equationsEquilibrium constantsICE method LeChatelier’s principle | Acids & basesHydronium & hydroxidepH and pOHNeutralization & titrationSolubilitySolubility products | Wrap up coursePractice session for lab exam,Practice examinations |
| Overview |  Test (heat of reaction) | 6 lessons1 lab (Le Chatelier)1 test  | 9 lessons1 lab (Reaction rate)1 test  | 6 Lessons1 Lab (Titration) | Lab exam |
| ~Periods | 9 | 8 | 8 | 12 | 8 |