

R Chemistry 10 week: Organic-Not Nuclear course

This course is comprised of 2 full units from the NYS Physical Setting-Chemistry curriculum: Physical Behavior of Matter (including Gas Laws) and Organic Chemistry. This amounts to approximately 20-25% of the questions on the Regents exam in June. The grade for this course, however, is not averaged into the final grade for the year-long Chemistry class. This course shows up as a separate course on a student's transcript and is averaged into a student's GPA as a ¼ year credit. Several labs will be completed in this course and can count toward lab hours for the Regents exam, if needed. 20 hours of satisfactory lab work is needed to be eligible to sit for the Regents exam in Chemistry.

Unit 1: Physical Behavior of matter

- Phases of Matter and Phase changes
- Exothermic vs Endothermic processes
- Heating and cooling curves
- Types of energy (PE vs. KE) and temperature
- Heat Energy calculations

Unit 2: Gas Laws

- Kinetic Molecular Theory
- Avogadro's Theory
- Relationships of P,V and T (pressure, volume and temperature)
- Standard conditions of Temperature and pressure
- Boyles Law
- Combined Gas Law

Unit 3: Organic Chemistry

- Definition, properties and bonding of Organic compounds
- Saturated Hydrocarbons (alkanes): properties, naming and drawing structural formulas
- Unsaturated Hydrocarbons (alkenes & alkynes): properties, naming and drawing structural formulas and chemical reactions (addition, substitution)
- Alcohols and Halocarbons: properties, naming and drawing structural formulas and chemical reactions (addition, substitution, fermentation)
- Other organic compound and the use of Table R
- Esters and Esterification
- Polymerization and Saponification

Labs and worksheets

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