**COMMUNIQUE #9**

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| **Course: Chemistry Lab** | **Instructor: Robert Vetter** |

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| **Week 33, Unit 8: Chemical Thermodynamics**  **States of Matter**  **A. States and State Changes**  **B. Intermolecular Forces**  **C. Energy of State Changes**  **D. Phase Equilibrium**  **Activity: Phase Change Diagram**  **Suggested Home Study: Research Thermodynamics and states of matter. Practice using phase change diagrams. Read corresponding material in your text book or find online resources that align with the topic at hand.** |
| **Week 34, Unit 9: Reaction Rates and Chemical Equilibrium**  **Chemical Equilibrium**  **A. Equilibrium Constant (Keq) Expressions and Calculations**  **B. Opposing Reaction rates are equal at Equilibrium**  **C. Le Châtelier’s principle**  **a. predict the effect of concentration change**  **b. predict the effect of temperature change**  **c. predict the effect of pressure change**  **Reaction Rates**  **A. Reaction Rate in terms of concentration and time**  **B. Factors that affect reaction rate: concentration, temperature, pressure**  **C. Effect of catalyst on reaction rate**  **Suggested Home Study: Research chemical equilibrium and reaction rates. Read corresponding material in your text book or find online resources that align with the topic at hand.** |
| **Week 35, Unit 10: Nuclear Chemistry and Organic Chemistry and Biochemistry**  **Nuclear Chemistry**   1. **Nuclear Forces within the nucleus** 2. **Nuclear Fusion** 3. **Nuclear Fission** 4. **Nuclear reactions and e=mc2**   **Suggested Home Study: Research Nuclear Chemistry and nuclear fission and fusion. Read corresponding material in your text book or find online resources that align with the topic at hand.** |
| **Week 36, Unit 10: Nuclear Chemistry and Organic Chemistry and Biochemistry**  **Nuclear Chemistry**   1. **Radioactive Isotopes** 2. **Radioactive Decay: Alpha, Beta, and Gamma** 3. **How the nucleus changes during decay** 4. **Amounts and kinds of Damage from radiation**   **Activity: Chernobyl and Fukushima disasters. San Onofre**  **Suggested Home Study: Research radioactivity, nuclear energy, and nuclear disasters. Read corresponding material in your text book or find online resources that align with the topic at hand.** |
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