To satisfy the minimum requirements for this course, you should be able to:

1. Understand the concept of stoichiometry and be able to:
   • write balanced chemical equations including states
   • interpret balanced chemical reactions at the particulate and molar level

2. Apply your understanding of the properties of aqueous solutions to:
   • identify the solvent and solute(s) in a solution
   • predict whether a substance is a strong electrolyte, weak electrolyte, or nonelectrolyte
   • write balanced chemical equations for the dissolving of molecular compounds, ionic compounds, and acids and bases in water

3. Write balanced chemical, complete ionic, and net ionic equations for precipitation reactions and acid-base reactions and identify spectator ions

4. Recognize precipitation reactions and use solubility rules (see the General Chemistry Reference Sheet and Figure 3.10 in the textbook) to predict when a precipitation reaction is likely to occur.

5. Recognize acid-base reactions and be able to:
   • define Bronsted acids and bases
   • explain the differences between strong and weak acids and between strong and weak bases

6. NavApp: Boiler Water 2
   • Write balanced chemical equations for simple precipitation reactions involving phosphates, such as: $3\text{CaCl}_2(\text{aq}) + 2\text{Na}_3\text{PO}_4(\text{aq}) \rightarrow 6\text{NaCl(}\text{aq}) + \text{Ca}_3(\text{PO}_4)_2(\text{s})$
   • Be able to recognize balanced chemical equations for the acid-base and precipitation aspects of reactions involving phosphates in boiler water treatment, such as $3\text{CaCl}_2(\text{aq}) + 2\text{Na}_2\text{HPO}_4(\text{aq}) + 2\text{NaOH(}\text{aq}) \rightarrow \text{Ca}_3(\text{PO}_4)_2(\text{s}) + 6\text{NaCl(}\text{aq}) + 2\text{H}_2\text{O(l)}$