CHEM2120 Main Group Chemistry

Course Description:
This course covers acid-base chemistry, chemistry in aqueous and non-aqueous solutions, chemistry of s- and p-block elements and periodicity.

Main Course Outline (for reference only):

1. **Acid-Base Chemistry**
   Acid-base concepts (Brønsted-Lowry, Lux-Flood, Lewis, Hard-Soft acid-base, solvent system, superacid, and generalized acid-base concepts). Acid-base reactions. Measures of acid-base strength (proton affinities, proton loss, electron affinities, Drago-Wayland equation).

2. **Chemistry in Aqueous and Nonaqueous Solutions**
   Solubility. Nonaqueous solvents. Molten salts. Electrode potentials and electromotive forces.

3. **Chemistry of Main Group Elements**
   General periodic trends of periodic groups. Chemistry, chemical properties and periodic trends of *s*- and *p*-block elements: groups 1 & 2, and 13-18.

4. **Periodicity**
   First and second row anomalies. The use of *p* orbitals in π bonding. The use of *d* orbitals by non-metals. Reactivity and *d* orbital participation.