Chem 231: Introduction to Organic Chemistry
Course description: Understanding structure, stereochemistry and mechanism; nucleophiles, substitutions, eliminations and additions. In the tutorials examples will illustrate concepts and relevant spectroscopy.
Course Goals
Develop an understanding of the reductionist approach to complex molecules, and how atoms and small collections of atoms relate to chemical properties.
Develop an understanding of the systematic naming of chemical compounds
Develop an understanding of the representation of chemical structures
Develop an understanding of the basic theory and application of spectroscopy
Develop the ability to draw molecules, including conventions and tools to represent their stereochemistry
Develop the ability to recognize and visualize the shapes and symmetry of molecules
Develop an understanding of the consequences of the three dimensional structure of molecules.
Develop an understanding of the concepts of homolytic and heterolytic bond cleaving and bond making.
Develop the ability to apply the concepts of nucleophilicity and electrophilicity to chemical reactions
Develop the ability to draw reaction mechanisms
Develop an understanding of how reaction conditions affect aspects of chemical reactivity.
Acquire knowledge of organic chemical reactions
Develop the ability to draw conclusions about relationships between structure and reactivity
Develop the ability to use principles of chemistry to design and plan a synthesis
Develop the ability to integrate the concepts of structure, reactivity and stereochemistry to the design of synthesis.
Program Goals
Develop competence in problem solving.
Develop the ability to represent chemical information.
Develop an understanding of the use of models, their premises, advantages and limitations.
Develop an understanding of the impact and relevance of chemistry in society.