

Chem 432: Organic Synthesis

Course description: The art and science of total synthesis, with a focus on aliphatic, aromatic and some biomolecules.

Course Goals

Develop the ability to integrate the concepts of structure, reactivity and stereochemistry to the design of synthesis.

Develop the ability to use principles of chemistry to design and plan a synthesis

Develop an understanding of the conceptual differences between a wide variety of reaction types

Acquire knowledge of organic chemical reactions

Develop the ability apply reaction mechanisms

Develop the ability to apply the concepts of nucleophilicity and electrophilicity to chemical reactions

Develop an understanding of the role of protective groups in synthesis

Develop the ability to draw conclusions about relationships between structure and reactivity

Develop an understanding of functional group reactivity in the design of multistep syntheses.

Develop an intellectual practical understanding of the most commonly employed methods in the synthesis of target inorganic and organic molecules

Program Goals

Develop the ability to represent chemical information.

Develop competence in problem solving.

Develop the ability to use the chemical literature in a critical manner.

Develop the ability to disseminate scientific information orally and in writing.

Develop an understanding of the impact and relevance of chemistry in society.