

# Organic Chemistry

## Concepts students need to know for class lecture

Understand and discuss acid-base theories  
Understand ionic bond theory  
Understand Valence Bond Theory (VBT)  
Relate bonding, shapes, and properties  
Describe hybridization and hybrid orbitals  
Describe multiple bonds in terms of  
VBT Describe resonance and write resonance forms  
Understand basics of Molecular Orbital  
Theory Construct molecular and hybrid orbitals  
Understand kinetic theory of reactions  
Understand principles of reaction equilibria

## Concepts students need to know for laboratory

Measure mass and volume  
Quantitatively transfer materials  
Filter and wash compounds  
Calculate theoretical and percent yields  
Use safe laboratory techniques  
Properly dispose of laboratory wastes

## Lecture Objectives

Classify organic functional groups  
Classify organic reactions  
Understand and apply reaction mechanisms  
Give theoretical explanations for reaction results  
Describe stereochemical structure of substances  
Draw quasi 3D structures of molecules  
Describe the stereochemistry of reactions  
Use spectroscopic data to identify substances  
Name organic compounds

## Laboratory Objectives

Learn methods for synthesis of organic compounds  
Isolate and purify organic compounds  
Carry out organic reactions  
Elucidate structures of organic compounds