

Organic Chemistry I

Class Notes

Name Here

Fall 2025

Contents

1	Basic Concepts	2
2	Chemical Reactions	2
3	Basic Theory	2
4	Problem-Solving Strategy	3

1 Basic Concepts

Definition 1.1: Functional Group

A functional group is a specific arrangement of atoms that gives a molecule its characteristic chemical properties.

Example 1.2: Common Functional Groups

Key functional groups in organic chemistry:

- Alcohol: -OH
- Ketone: >C=O
- Carboxylic acid: -COOH
- Amine: -NH_2

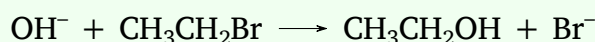
Always identify functional groups first when analyzing a molecule!



2 Chemical Reactions

Reaction 2.1: Substitution

Nucleophilic substitution with ethyl bromide:



Laboratory Safety

Always follow proper safety protocols when working with organic halides.

3 Basic Theory

Theorem 3.1: VSEPR Theory

Valence Shell Electron Pair Repulsion theory predicts molecular geometry based on minimizing electron pair repulsion around a central atom.

Formula 3.1: Bond Angles

Common bond angles:

Tetrahedral	: 109.5°	(1)
Trigonal planar	: 120°	(2)
Linear	: 180°	(3)

4 Problem-Solving Strategy

Systematic Approach

When solving organic chemistry problems:

1. Identify all functional groups
2. Determine the reaction type
3. Consider stereochemistry
4. Check your mechanism
5. Verify your final answer

Practice makes perfect in organic chemistry!

