UNIT 16 –AROMATIC SUBSTITUTION

OCSL: Chapter 3 (skip 3.8), Chapter 8: 8.4 – 8.6

VTOC: Benzene & Derivatives
- Electrophilic Substitution
- A Substitution Mechanism
- Reactions of Substituted Benzenes
- Reaction Characteristics
- Reactions of Disubstituted Rings
- Reactions of Substituent Groups

UC Davis: Synthesis of Aromatics
- Synthesis of Benzene Derivatives: Electrophilic Aromatic Substitution
- Reactions of Aromatics
- Electrophilic Aromatic Substitution
- Substitution Reactions of Benzene and Other Aromatic Compounds
- Substitution Reactions of Benzene Derivatives
- Substitution Reactions of Benzene Derivatives (II)
- Friedel-Crafts Acylation
- Friedel-Crafts Alkylation
- Halogenation of Benzene-The Need for a Catalyst
- Nitration and Sulfonation of Benzene
- Electrophilic Substitution of Disubstituted Benzene Rings
- Reactions of Substituent Groups
- Modifying the Influence of Strong Activating Groups

UCalgary: Electrophilic Aromatic Substitution reactions
- Overview
- Table of EArS reactions and reagents
- Nitration
- Sulfonation
- Halogenation
- Friedel-Crafts alkylation
- Friedel-Crafts acylation
- Limitations of Friedel-Crafts reactions
- Substituent Effects - (table of substituent effects)
- Making polysubstituted benzenes
- Sample problems

Skills:

16A. Draw the mechanism of electrophilic aromatic substitution.

16B. Predict how substituents effect the rate of reaction.

16C. Use sigma complexes to explain how substituents effect the regiochemistry of reaction.

16D. Predict the products of the following reactions with aromatic rings: halogenation, nitration., sulfonation, Friedel-Crafts alkylation, Friedel-Crafts acylation, benzylic bromination, permanganate oxidation, Clemmson reduction, Wolf-Kishner Reduction, protection and deprotection of anilines with acyls, formation and reaction of diazonium salts.

16E. Propose multistep syntheses of polysubstituted aromatics.