Reaction Summary (Chapters 4 - 6)

General Principles:

mechanism / reactivity patterns
regioselectivity / stereoselectivity

ROH --- (HX) ---> RX
SN1 or SN2

ROH --- ($SOCl_2$) ---> RCl

ROH --- (PBr_3) ---> RBr

RH --- (X_2, heat or light) ---> RX
radical chain mechanism

ROH --- (H_2SO_4, heat) ---> C=C
E1, Zaitsev regiochem

RX --- (KOH, EtOH) ---> C=C
E2, anti periplanar stereochem, Zaitsev

C=C --- (H_2, cat) ---> RH
syn stereochem

C=C --- (HX) ---> RX
Markovnikov regiochem

C=C --- (HBr, peroxides) ---> RBr
anti-Markovnikov regiochem

C=C --- (H_2O, acid) ---> ROH
Markovnikov

C=C --- (1) B_2H_6, 2) H_2O_2) ---> ROH
syn stereochem, anti-Markovnikov regiochem

C=C --- (X_2) ---> vicinal dihalide
anti stereochem

C=C --- (X_2 , H_2O) ---> halohydrin
anti stereochem, Markovnikov regiochem

C=C --- (RCO_3H) ---> epoxide

C=C --- (1) O_3 , 2) Zn) ---> 2 C=O (cleavage)

C=C --- (radicals or cations) ---> polymer
chain mechanism, Markovnikov