

# CHEM 10052 - Intro. Organic Chemistry

## Reactions of Carboxylic Acids and Esters - Key

### Nucleophilic Substitution

ester + H<sub>2</sub>O ⇌ acid + alcohol

thioester + alcohol ⇌ ester + thiol

alcohol + phosphate ⇌ alkyl phosphate + H<sub>2</sub>O

### Decarboxylation

$\beta$ -diketone  $\xrightarrow{\text{heat}}$  ketone + CO<sub>2</sub>

### Claisen condensation

2 ester  $\xrightarrow{\text{base}}$   $\beta$ -diketone + alcohol

