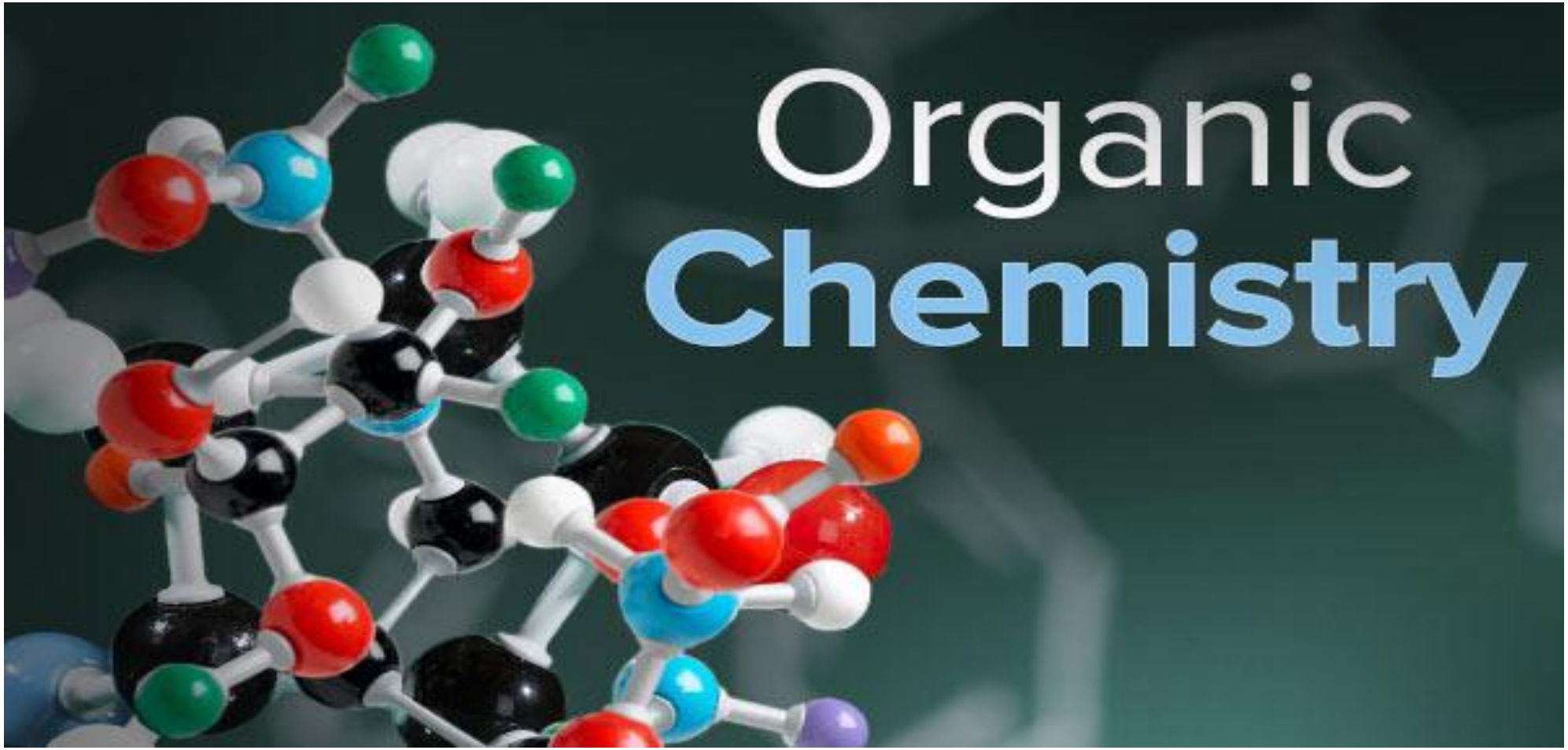
الكلية	العلوم
القسم	الكيمياء
المادة باللغة الانجليزية	Organic Chemistry
المادة باللغة العربية	الكيمياء العضوية
المرحلة الدراسية	الاولى
اسم التدريسي	محمد عدنان عبد منديل
عنوان المحاضرة باللغة الانجليزية	Acid and Base reactions
عنوان المحاضرة باللغة العربية	تفاعل الحامض والقاعدة
رقم المحاضرة	الثالثة
المصادر والمراجع	الكيمياء العضوية لمؤلفه (كلايدن)
	مبادي الكيمياء العضوية لمؤلفيه (موريون و بويد)



Organic Chemistry 1st level

Introduction to Organic Chemistry

- Acid
- Base
- Acid and Base reactions

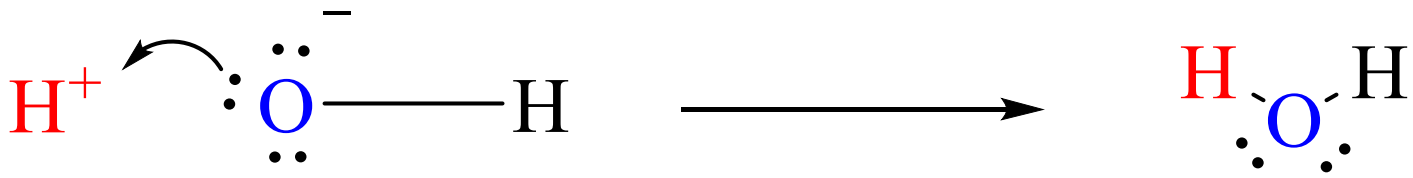
Introduction to Organic Chemistry

Acid is the latin word “acere” which means “sour”. According to Arrhenius that acid is any species increases the concentration of H^+.

$$HCl\ (aq) \longrightarrow H^+\ (aq) + Cl^-\ (aq)$$

Introduction to Organic Chemistry

- In the Lewis theory of acid-base reactions, acids accept pairs of electrons. A **Lewis acid** is therefore any substance, such as the H^+ ion, that can accept a pair of nonbonding electrons. In other words, a Lewis acid is an **electron-pair acceptor**.



- There are many examples of acids such as HCl, H_2SO_4, HNO_3, CH_3COOH (acetic acid).

Introduction to Organic Chemistry

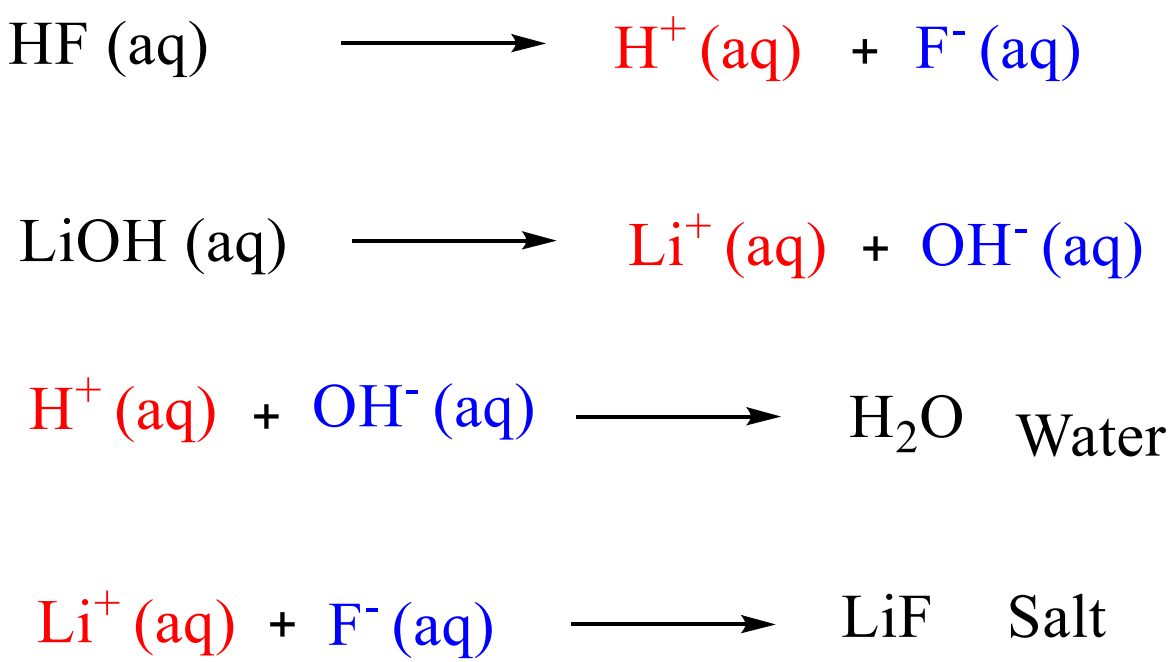
- An Arrhenius base is defined as any species that increases the concentration of hydroxide ions, OH^-, in aqueous solution. An example of an Arrhenius base is the highly soluble sodium hydroxide, NaOH.

$$NaOH\ (aq) \longrightarrow Na^+\ (aq) + OH^-\ (aq)$$

- A **Lewis base** is any substance, such as the OH^- ion, that can donate a pair of nonbonding electrons. A Lewis base is therefore **an electron-pair donor**.

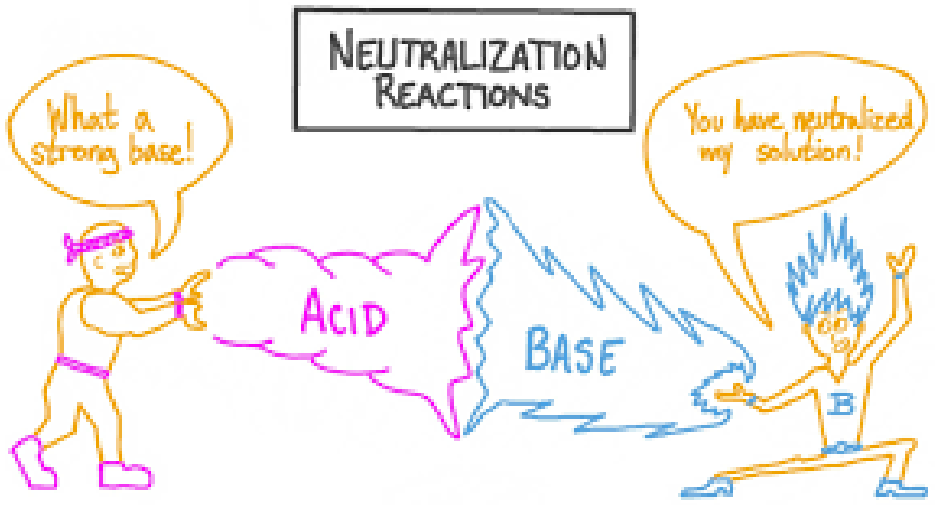
Introduction to Organic Chemistry

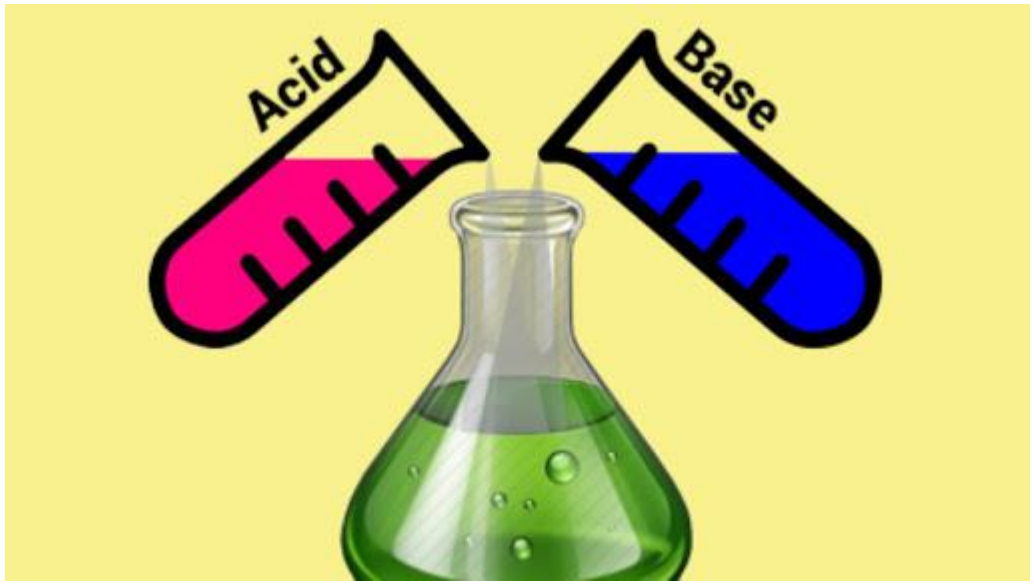
- **Acid-base reactions**



Introduction to Organic Chemistry

- Neutralization





Introduction to Organic Chemistry

Strong Acids	Strong Bases
HCl	LiOH
HBr	NaOH
HI	KOH
$HClO_4$	RbOH
HNO_3	CsOH
	$Ca(OH)_2$
	$Sr(OH)_2$
	$Ba(OH)_2$

Introduction to Organic Chemistry

- 1. Acids have a sour taste.
- 2. Acids are corrosive.
- 3. Acids change the color of certain vegetable dyes, such as litmus, from blue to red.
- 4. Acids lose their acidity when they are combined with alkalies.

1- Alkalies feel slippery

2- Alkalies change the color of litmus from red to blue.

3- Alkalies become less alkaline when they are combined with acids.

Acid

Blue litmus turns red

Base

Red litmus turns blue

Thank you for attention