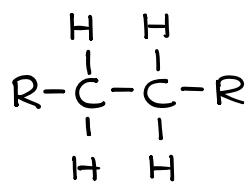
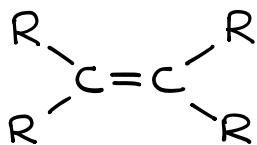


MUST-KNOW FUNCTIONAL GROUPS



alkane



alkene



alkyne



arene / benzene



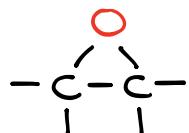
haloalkane



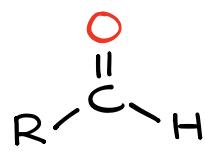
alcohol



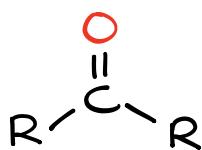
ether



epoxide



aldehyde



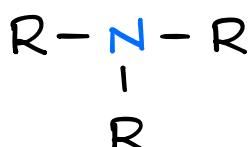
ketone



thiol



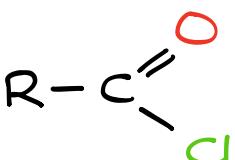
sulfide



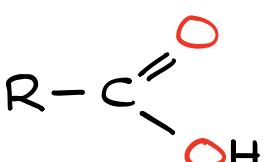
amine



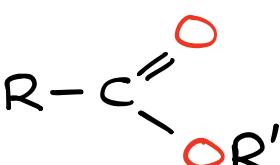
nitrile



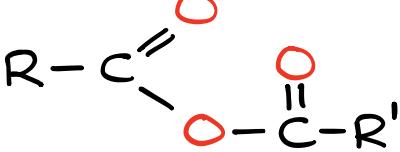
acid halide



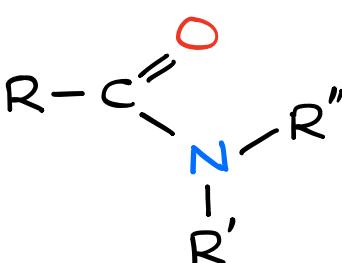
carboxylic acid



ester



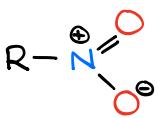
anhydride



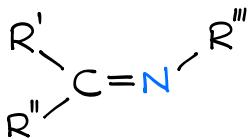
amide

OTHER NOTEWORTHY FUNCTIONAL GROUPS

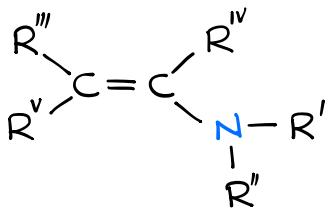
You are likely to encounter these functional groups in your course, however, you're probably won't have to give the IUPAC names to any molecules containing these functional groups.



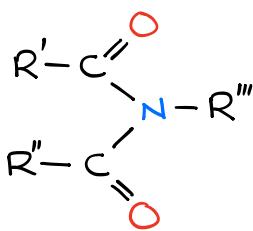
Nitro



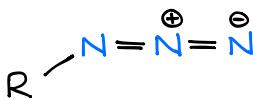
Imine



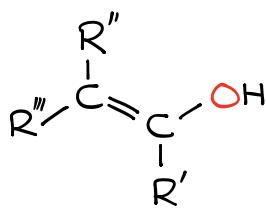
Enamine



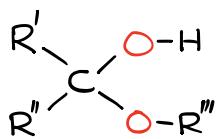
Imide



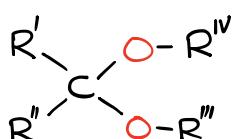
Azide



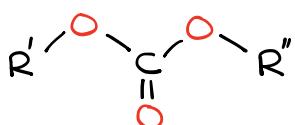
Enol



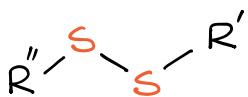
Hemiacetal



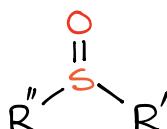
Acetal



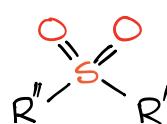
Carbonate



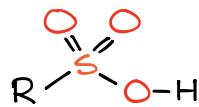
Disulfide



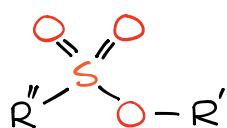
Sulfoxide



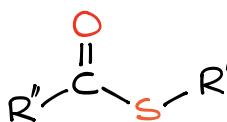
Sulfone



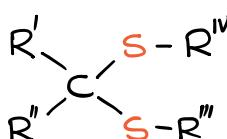
Sulfonic Acid



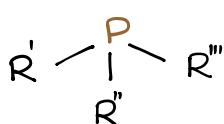
Sulfonate Ester



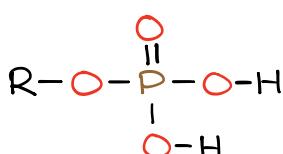
Thioester



Thioacetal



Phosphine



Phosphate Ester

FUNCTIONAL GROUPS SENIORITY RULES

Adapted from IUPAC 2013 Recommendations , Rule P-41

1	Carboxylic Acids Highest seniority	$\begin{array}{c} \text{O} \\ \\ \text{R}-\text{C} \\ \\ \text{O}-\text{H} \end{array}$	alkanoic acid	
2	Acid Anhydrides	$\begin{array}{c} \text{O} \\ \\ \text{R}-\text{C} \\ \\ \text{O}-\text{C}-\text{R} \end{array}$	alkanoic anhydride	
3	Esters	$\begin{array}{c} \text{O} \\ \\ \text{R}-\text{C} \\ \\ \text{O}-\text{R}' \end{array}$	alkyl alkanoate	
4	Acid Halides	$\begin{array}{c} \text{O} \\ \\ \text{R}-\text{C} \\ \\ \text{Cl} \end{array}$	alkanoyl chloride	
5	Amides	$\begin{array}{c} \text{O} \\ \\ \text{R}-\text{C} \\ \\ \text{NH}_2 \end{array}$	alkanamide	
6	Nitriles	$\text{R}-\text{C}\equiv\text{N}$	alkanonitrile	
7	Aldehydes	$\begin{array}{c} \text{O} \\ \\ \text{R}-\text{C} \\ \\ \text{H} \end{array}$	alkanal	
8	Ketones	$\begin{array}{c} \text{O} \\ \\ \text{R}-\text{C} \\ \\ \text{R}' \end{array}$	alkanone	
9	Alcohols	$\text{R}-\text{OH}$	alkanol	
10	Thiols	$\text{R}-\text{SH}$	alkane <th>thiol</th>	thiol
11	Amines	$\text{R}-\text{NH}_2$	alkanamine	
12	Alkenes & Alkynes	$\begin{array}{c} \text{R} \quad \text{R} \\ \quad / \\ \text{C}=\text{C} \\ \quad \backslash \\ \text{R} \quad \text{R} \end{array}$	alkene $\text{R}-\text{C}\equiv\text{C}-\text{R}$ alkyne	
13	Alkyl chains & halides Lowest seniority, Use alphabetic order	$\{ \text{R}$	alkyl -F fluoro- -Cl chloro- -Br bromo- -I iodo-	

MUST-KNOW COMMON GROUP NAMES

Hydrocarbon Groups (only contain C & H)

		abbreviation	
- CH ₃	methyl	- Me	
- CH ₂ -CH ₃	ethyl	- Et	
- CH ₂ -CH ₂ -CH ₃	propyl	- Pr	
	isopropyl (1-methylethyl)	- iPr - (1-methylethyl) - IUPAC	
- CH ₂ -CH ₂ -CH ₂ -CH ₃	butyl	- Bu	
	phenyl - Ph - φ - ϕ		
- C=CH ₂	vinyl ethenyl	- IUPAC	
	allyl (2-propenyl)	- IUPAC	
- CH ₂ -CH(CH ₃) ₂	isobutyl (2-methylpropyl)		- iBu - (2-methylpropyl) - IUPAC
	sec-butyl (1-methylpropyl)		- sBu - (1-methylpropyl) - IUPAC
	tert-butyl (1,1-dimethylethyl)		- tBu - (1,1-dimethylethyl) - IUPAC
	benzyl (phenylmethyl)		- Bn - (phenylmethyl) - IUPAC
- CH ₂ -C≡C-H	propargyl (2-propynyl)		- IUPAC

Other Common Abbreviations & Common Groups

	acetyl	- Ac		triflyl	- Tf
	tosyl	- Ts		mesyl	- Ms