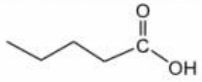
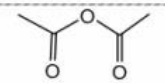
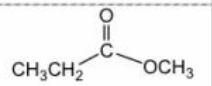
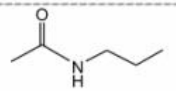
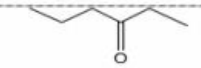
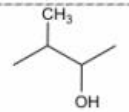
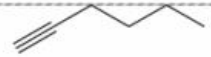
Organic Chemistry

TOPIC 1: Carbonyl Carbon

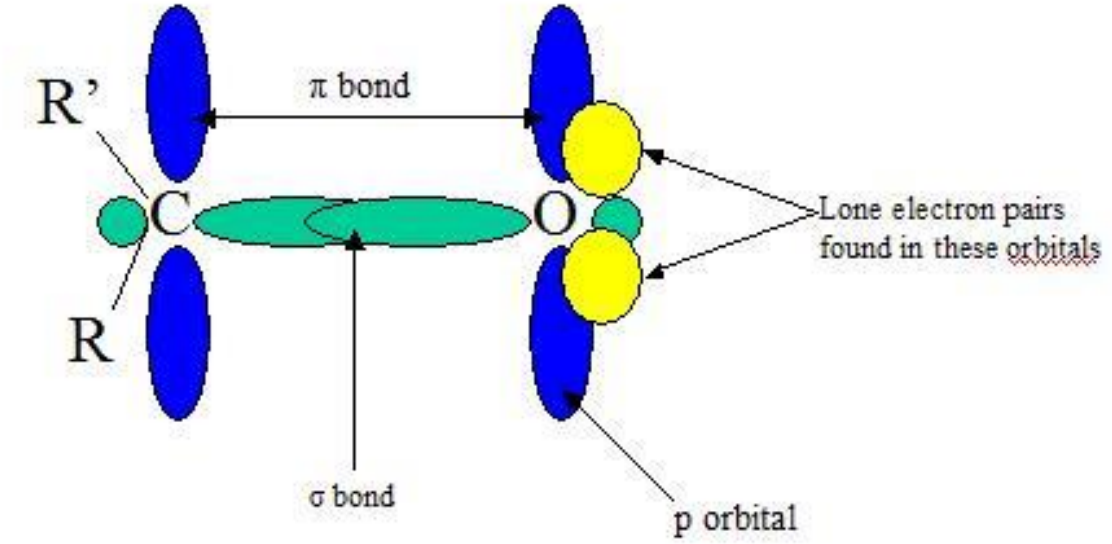
IUPAC nomenclature

Functional group naming:

Functional group	Prefix	Suffix	Examples	Name of Example
carboxylic acid	carboxy	–oic acid –carboxylic acid		pentanoic acid
acid anhydride	—	–oic anhydride –carboxylic anhydride		ethanoic anhydride
carboxylic ester	alkoxycarbonyl	–oate –carboxylate		methyl propanoate
amide	amido	–amide –carboxamide		N-propylethanamide
nitrile	cyano	–nitrile (keep "e") –carbonitrile		butanenitrile
ketone	oxo	–one		3-hexanone
alcohol	hydroxy	–ol		3-methyl-2-butanol
amine	amino	–amine		butylamine (common name)
alkene	enyl	–ene		2-pentene
alkyne	ynyl	–yne		1-hexyne
alkyl	yl	–ane		2,2-dimethylbutane

https://kpu.pressbooks.pub/organicchemistry/chapter/2-4-naming-of-organic-compounds-with-functional-groups/

Characteristics



- Vastly different reactivity of double bonds in alkenes and double bonds in carbonyl groups
- C=C is *less* reactive electronegativity of C=O due to oxygen lone pair electron
- C=O is inductively electron withdrawing

https://chem.libretexts.org/Bookshelves/Organic_Chemistry/Supplemental_Modules_(Organic_Chemistry)/Aldehydes_and_Ketones/Properties_of_Aldehydes_and_Ketones/The_Carbonyl_Group