Orders and families to know for Botany 400 2nd lecture exam

***Caryophyllales** - betalains, dichasium inflorescence, free-central or derived (basal) placentation; petals often lacking

*Phytolaccaceae — CA^{5} CO^{0} A^{10} $\underline{G}^{(5+)}$ -berry — [raceme; sometimes apocarpic]

*Caryophyllaceae — $CA^{\smile 5}$ CO^{5} $A^{5,10}$ $\underline{G}^{(2\text{-}5)}$ -capsule — [dichasium; free-central]

*Portulacaceae — CA^{2} CO^{5} A^{5+} $\underline{G}^{(2\text{-}3)}$ -capsule — [few basal ovules; capsule or pyxis]

*Cactaceae — $\underbrace{CA^{\infty}\ CO^{\infty}\ A^{\infty}}\ \underline{G}^{(4)}$ -berry — [parietal]

*Amaranthaceae/ Chenopodiaceae — $CA^{3\text{-}5}$ CO^{0} A^{5} $\underline{G}^{(2\text{-}3)}$ -achene — [unesexual flowers; one ovule; achene or utricle]

***Saxifragales** - intermediate between ranunculids and rosids; usually 2-6 carpels that are only slightly fused at base

*Saxifragaceae — $\underbrace{CA^{5}\ CO^{5}\ A^{5\text{ or }10}}\ \underline{G}^{\smile 2}$ -follicles

*Crassulaceae — $\underbrace{CA^{4\text{-}6}\ CO^{4\text{-}6}\ A^{8\text{-}12}}\ \underline{G}^{\smile 4\text{-}6}$ -follicles

***Rosales** - Nitrogen fixing, loss of corolla, glandular leaf serrations

*Rosaceae — $\underbrace{CA^{5}\ CO^{5}\ A^{\infty}}\ \underline{G}^{\infty}$ -follicles — Spiraeoideae

$\underline{G}^{\infty}$ -achenes — Rosoideae — $\underline{G}^{1}$ -drupe — Prunoideae — $\underline{G}^{(5)}$ -pome — Maloideae

*Ulmaceae — $\underbrace{CA^{4\text{-}8}\ CO^{0}\ A^{4\text{-}8}}\ \underline{G}^{(2)}$ -1 seeded samara

*Moraceae — [unisexual, multiple fruit (syconium) of 1 seeded units]

Fabales - don't need to know order

*Fabaceae CA^{5} COZ^{5} $A^{(9)+1}$ $\underline{G}^{1}$ -legume Faboideae

how are Caesalpinoids & Mimosoids different?

***Malpighiales -** leaf teeth, parietal placentation, buttefly chemistry

*Violaceae CA^{5} COZ^{5} A^{5} $\underline{G}^{(3)}$ -capsule

*Salicaceae CA^{0} CO^{0} A^{∞} $\underline{G}^{(2)}$ -capsule [unisexual flowers]

*Euphorbiaceae CA^{0} CO^{0} A^{∞} $\underline{G}^{(3)}$ -capsule [unisexual flowers, cyathium - then male flowers with 1 stamen]

***Fagales -** wind pollination, trees, aments, inferior ovary, nut fruit, bracts

*Juglandaceae
*Fagaceae
*Betulaceae

CA^{3-6} CO^{0} A^{∞} $\underline{\underline{G}}^{(2-3)}$ -nut [unisexual]

***Sapindales -** woody, compound leaves, disk, 1-2 ovules per ovary

*Anacardiaceae CA^{5} CO^{5} $A^{5,10}$ $\underline{G}^{(3)}$ -drupe [bisexual or unisexual]

*Sapindaceae [Aceraceae] CA^{4-5} $CO^{0,4-5}$ A^{4-10} $\underline{G}^{(2)}$ -samara, schizocarp [bisexual or unisexual]

Malvales - don't need to know order

*Malvaceae s.l. CA^{5} CO^{5} $A^{(\infty)}$ $\underline{G}^{(5-\infty)}$ -capsule

Brassicales or Capparales - mustard oils, don't need to know order

*Brassicaceae CA^{4} CO^{4} A^{4+2} $\underline{G}^{(2)}$ -silique, silicle

***Myrtales -** internal phloem, vestured pits, well developed hypanthium

*Onagraceae CA^{4} CO^{4} $A^{4,8}$ $\underline{\underline{G}}^{(4)}$