

# GY303 Igneous & Metamorphic Petrology Lab

Phaneritic Ultramafic Igneous Rocks  
Identification

# Ultramafic Minerals

- Orthopyroxene: equidimensional “square-ish” dark green, black, or reddish-pink grains with orthorhombic symmetry (ex. Enstatite). 2 directions of cleavage at approx. 90 degrees.
- Clinopyroxene: prismatic green to black monoclinic grains (ex. Diopside). 2 directions of cleavage at approx. 90 degrees.
- Olivine: light to dark olive green euhedral grains that are equidimensional. Conchoidal fractures common.
- Spinel ( $MgAl_2O_4$ ): variety of colors, conchoidal fracture, H=7.5-8, S.G.=3.581, Crystal form = Octahedral

# Ultramafic Minerals cont.

- Hornblende: dark green to black amphibole with 2 directions of cleavage at 120 and 60 degrees.
- Accessories: biotite (phlogopite) , magnetite, chromite, sulfides, serpentine, spinel, garnet.

IUGS Classification for ultramafic igneous rocks  
Olivine+Opx+Cpx

