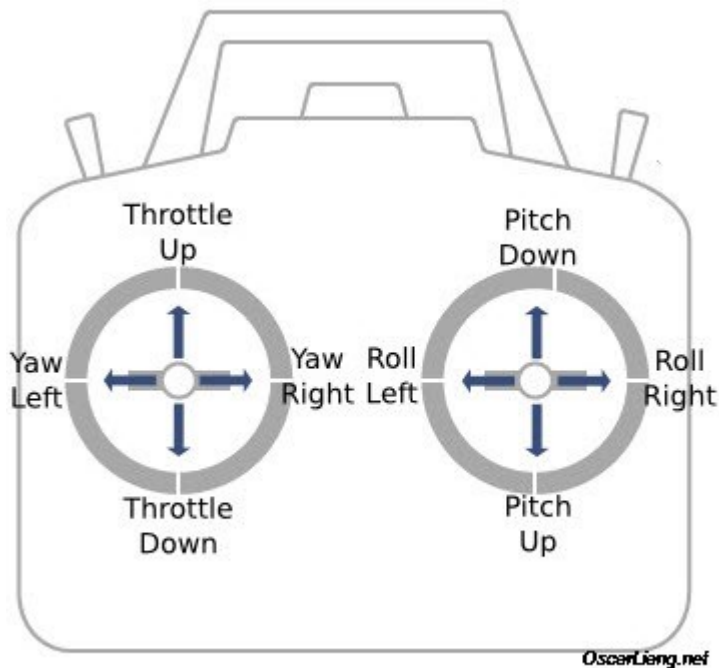
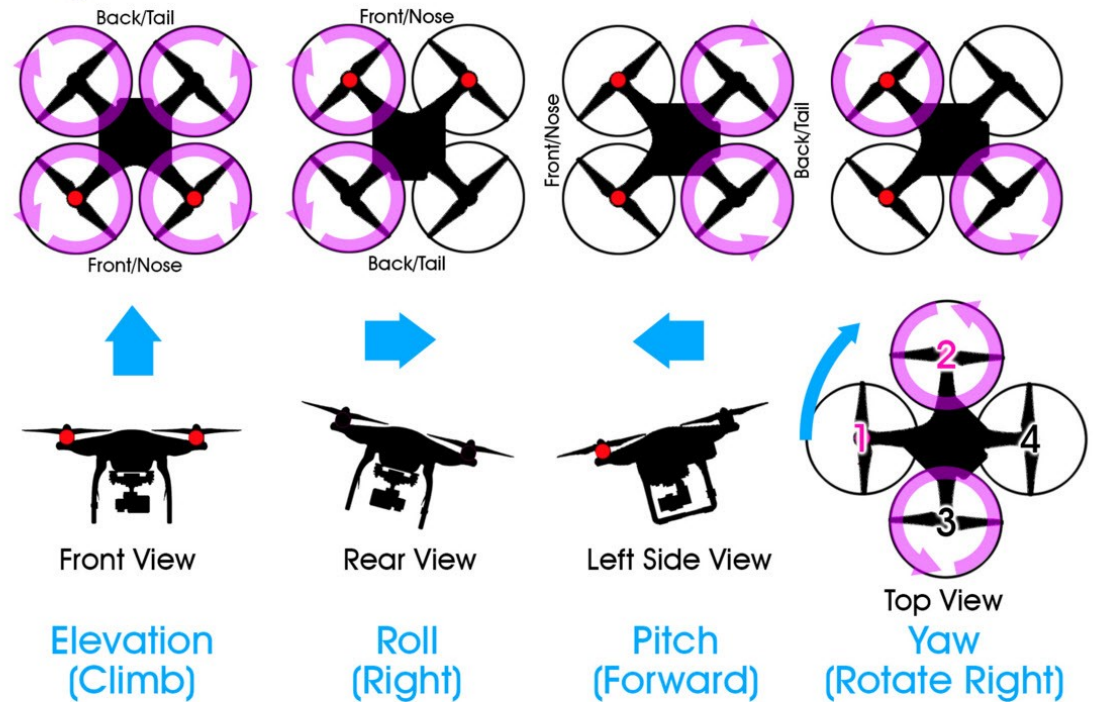


UP...DOWN...PITCH...YAW & ROLL!



CONTROLLER

Quadcopter Axes and Motions



Prepared for Portland State University "Drones: Multidisciplinary Uses" (USP 410/510)
Instructor Ric Stephens

Hover (Height Constant): all 4 motors same speed. **Ascend:** all 4 motors increasing speed equally using throttle-up. **Descend:** all 4 motors decreasing speed using throttle-down. **Roll Right:** left-side motors increase in speed. **Roll Left:** right side motors increase speed. **Pitch Forward:** back motors increase speed. **Pitch Backward:** front motors increase speed. **Yaw Right:** front-right and back left motors increase speed. **Yaw Left:** left-front and right-rear back motors increase speed. **Fly Forward:** pitch forward and throttle up. **Fly Backward:** pitch backward and throttle-up.