

Week 6

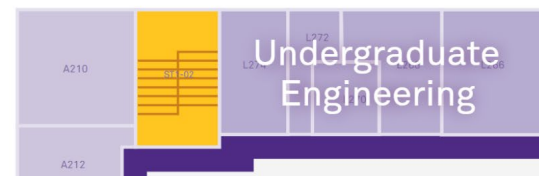
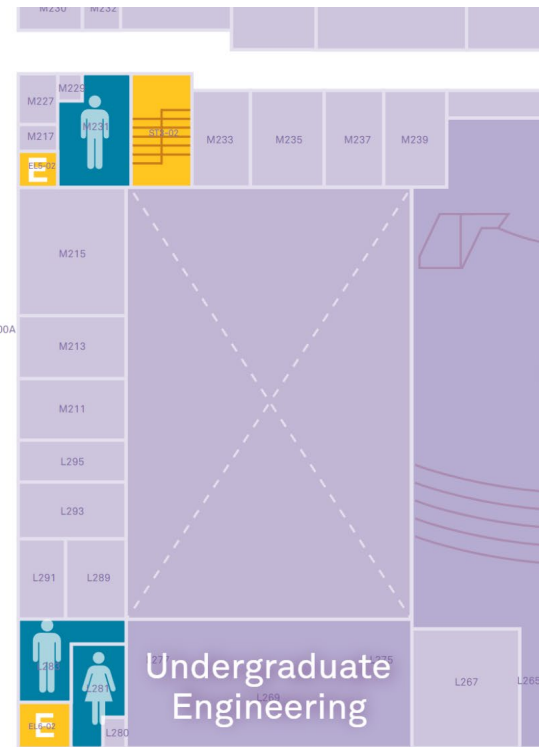
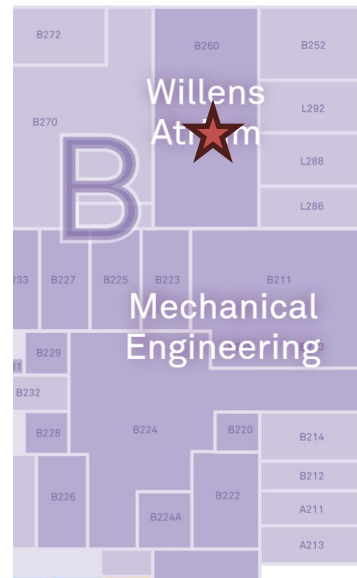
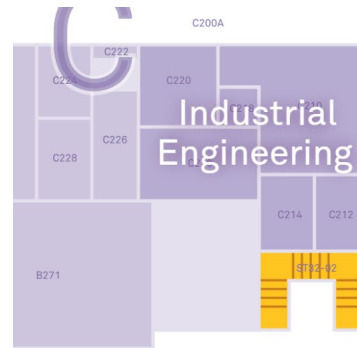
Yaw

Ground effect flight

Stable flight

Room change for 5/15

- Garage closed Wed-Friday next week
- Class will instead be in Willens Atrium, Tech B260
- Take equipment out of lockers before garage closes on Tuesday.



Small updates/suggestions

- Make sure all batteries are charged for next class!
- Use battery alarms
- When pausing motors, set to a small number like 2, not 0. Don't stop sending any motor commands.

Milestones (overview)

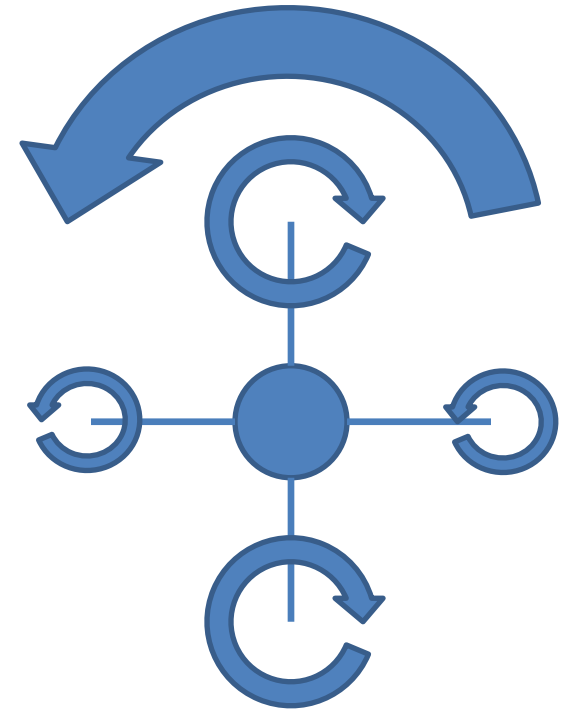
1. Yaw
2. Ground effect hover
3. Ground effect flight (you, not your partner)

Get ahead milestone for next class:

1. Full flight (you, not your partner)

Yaw control

- Turn off pitch and roll (keep thrust)
- Command desired yaw velocity with left joystick
- Try to match desired yaw velocity using only P control.
- Hand testing, no free flight yet! (should be able to feel it (barely), and see it with low thrust values)



Milestone 1

- Hand held (no free flight yet!) test of just yaw control (turn off Pitch and roll)
- Show graph of yaw rate, desired yaw rate, and motor speeds.
- Should be able to feel yaw control.

Milestone 2

- Show stable smooth hover (may still drift in position) in ground effect

Milestone 3

- Move to location on floor with ground effect flight (no more than 5 cm high)
- Max thrust should not be able to lift off completely- test when holding first
- Human control strategy:
 1. Keep quad facing away from you (pitch axis), using Yaw control
 2. Roll is then left/right, pitch is then forward, backwards,

Milestone 1 next week

- Flight!
- Neutral thrust should not be enough to fly (just barely)
- Hover about 2 feet high
- Don't fly above 2 feet (crashes are more likely to break things)
- Milestone check: stable flight within a 2 foot sphere for 5 seconds