Week One: (Fall Break, 10/10 – 10/17)

- Design:
    - Discuss timeline
    - Finalize decision on block-catch mechanism, button-pressing/sensing, and competition operation (Two weeks until they must be designed, installed, and demonstrated)
    - Decide where to put distance-sensor and hall-effect sensor and if we need them for the competition (They're required for PM7 and PM8 even if we don't use them)
- Modeling:
    - Body fully designed and ready to be cut.
    - Attachment points included for Arduino, L298N, Battery pack, power button and at least two PCBs
    - Sufficient-sized window in central ribbing and top plate for cable pass-through
    - Installation slots for line-following array (bottom plate) and distance sensor (front plate?)
- Assembly
    - Body cut and installed with internal components still accessible
- Electrical
    - Power and control circuit boards designed
    - Line sensor and distance array installed and wired
- Programming
    - Implement line-following algorithm (PM7)
    - Implement distance-sensor check (PM7)
    - Working implementation of reverse kinematics
    - Updated state-transition diagram

GOALS:

- All major body-work finished
- Wiring plan for moving forward
- Arm algorithms ready for testing and refinement
- Line-following and distance sensor installed and working (PM 7)

Week Two (10/18 – 10/24)

- Design:
    - Discuss competition plan and timeline, make adjustments as necessary
- Modeling:
    - Add hall-effect sensor
    - Finish modeling catch mechanism and button-press mechanism
    - Finish modeling arm-end effector
- Assembly
    - Begin assembly of catch mechanism
    - Working button-press mechanism (PM 8 Requirement)
    - Working end effector installation
- Electrical
    - Continue design and begin soldering control and power circuit boards
    - Arduino barrel-jack soldered in
    - End effector (electromagnet and sensor) wired in
    - Update wiring diagram
- Programming
    - Implement Hall-Effect and Color Sensors (PM 8)
    - Arm kinematics fully tested and in working condition (PM 9 Prep.)
    - Block placement states implemented (PM 9 Prep.)
    - Begin work on kinematics arrays (PM 9 Prep.)
    - Updated state-transition diagram

Goals:

- Internal wiring finished
- Hall effect and color sensors fully installed and working (PM 8)
- Implementation of end effector and block catcher begun in preparation for PM 9
- Continued work on autonomous operations

Week Three (10/25 – 10/31)

- Design:
    - Design completed and ready for refinement
- Modeling:
    - Update model with any necessary changes (should be minimal)
- Assembly:
    - Block catch mechanism fully assembled (PM 9)
    - End effector fully assembled (PM 9)
- Wiring:
    - Circuit boards finished and installed
    - Wiring finished
    - Updated wiring diagram
- Programming:
    - Kinematics arrays fully implemented (PM 9)
    - Inverse kinematics dialed in (PM 9)
    - Autonomous state diagram working implementation
    - Updated pinout diagram
    - Update state-transition diagram

Goals:

- Mechanical implementation and design essentially finished
- Wiring essentially finished
- Robot capable of catching and delivering block (PM 9)
- Robot capable of going through competition motions (line-following, driving, catching a block, and placing a block), specifics likely still to be implemented
- Move into testing and refinement phase