# 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