September 30th: Implement a PIC that will be for use by the sensors only. The PIC should read sensor data and respond over I2C.

October 1st: Order sensors and accelerometer.

October 2nd: Set up all communication (transmission and reception) by the PIC for the sensors. Implement sensor sampling rate that is implemented at compile time. Communication should follow task diagram and message format.

October 7th: Document all progress and roadblocks encountered by sensors to discuss with instructor.

October 14th – 16th: Show accurate functionality of one sensor from start to finish (obtain data, store data, relay data upon request via I2C). Show design of sensors for ramp detection and demonstrate example of use. Show sensor layout for rover along with pin connections to PIC and power plan. Describe accelerometer implementation plan.

October 21st – 23rd: Document all progress and roadblocks encountered by sensor system to discuss with instructor before next milestone.

October 31st – November 2nd: Create test cases and expected results for each of the parts to be demonstrated for the next milestone. Plan for integration and determine tests to show communication between systems will be successful and accurate. Tests and expected results should be outlined in a document to be used during demonstrations.

November 4th – 6th: Demonstrate all functionality described for milestone 3 and execute test cases. Show tests yield expected results. Discuss overall integration and show communication between systems will be successful and accurate. Discuss format of data sensors will return and how that data will be manipulated/stored and relayed when requested from other systems on rover.

November 13th: Demonstrate that the rover can travel for 10 feet along a wall (within 3 feet of the wall), execute a left turn at a right angle and then continue for another 5 feet along the wall. This should demonstrate initial integration and communication between all systems. Sensors should read data and save to sensor queue to be sent when requested from the Rover Master PIC.

November 15th: Outline any and all revisions or additions needed for the final demonstration to be successful. Discuss changes to sensor system or what additional sensors may be needed.

November 18th – 20th: Demonstrate that at least half of the project revisions have been successfully implemented.

December 2nd – 4th: Prepare for final demonstrations: get any and all questions answered, execute tests on actual rover, complete any unfinished integration/communication, mount all necessary parts on rover if not done so already.

December 6th – 8th: Complete final demonstrations: Sensors should be able to detect any and all objects. Sensors should be able to detect a ramp and distinguish it from any other objects. Sensors should be used to center the rover to traverse the ramp. Accelerometer should determine when rover is ascending and/or descending the ramp and when the rover is on the top platform of the ramp. Sensors/accelerometer should be used to determine the height of the ramp. Sensors should be used in combination with algorithms implemented by the ARM to determine if the rover is moving parallel with the wall (or if any skew is present).

December 9th: Present poster describing project overview and implementation.

December 14th: Submit final project report and project videos discussing the overall project and specific design details that were implemented.