EECS 461 Fall 2009: Final Project Work Breakdown

Work may be completed in any order or at a pace faster than listed below. Below is a suggestion which will allow you to complete as much modeling as possible outside of lab. However, **you are responsible for having the tasks completed by the date specified.** Failure to complete a week's goals due to work on a future week's goals will not be overlooked. **Use a new sheet for each week's goals**.

Pre-lab: **High-level block diagram [5 pts]**
Tasks: Block diagram showing interaction between ACC and car model
State diagram showing ACC controller modes
Turn in: One pre-lab per group, due at the start of lab section week of 11/16.

Week 1: **S-function tutorial, layout, and physics (11/16-11/20) [10 pts]** *GSI Initial* _____
Tasks: Complete OSEK Turbo lab demo
Complete S function tutorial *Date* _____
Implement car physics differential equations
Implement your ACC state diagram in a state flow chart
Layout high-level system
Turn in: Initialed sheet at *beginning* of section during week of 11/30
Simulation plot of car physics (using model provided) during week of 11/30

Week 2: **Device-driver blocks (11/30-12/4) [10 pts]** *GSI Initial* _____
Tasks: Set up device driver blocks (GPIO, PWM, FQD, QADC, CAN, Serial)
Create test models to insure I/O working correctly *Date* _____
Verify correct data transmission over serial port
Integrate provided position and velocity control blocks
Demonstrate manual and speed control modes
Implement pick-lead logic
Turn in: Initialed sheet at *beginning* of section during week of 12/7.
A plot of your pick-lead logic simulation during week of 12/7

Week 3: **Lead-selection logic, testing (12/7-12/11) [5 pts]** *GSI Initial* _____
Tasks: Complete baseline model
Verify correct operation with CAN bus *Date* _____
Add-in debugged pick-lead logic
Verify correct operation of pick-lead logic under various conditions
Demonstrate position control mode
Implement automatic steering add-on
Turn in: Initialed sheet when baseline model completed.

Baseline: Baseline model (12/11) [30 pts] *GSI Initial* _____
Turn in: Initialed sheet when completed. *Date* _____

Add-on: Automatic Steering Add-On (12/18) [15 pts] *GSI Initial* _____
Turn in: Initialed sheet when completed. *Date* _____

Report: Final project report (12/18) [15 pts]
Turn in: A zipped folder with your report in PDF format and all your project files in one of your group members' dropbox on Ctools. Your report should follow the guidelines posted on the EECS 461 website.

Names: _____, _____ Section: M Tu W Th
Due date: **December 18th** by **6pm**. Make sure your group has submitted your report and project files on Ctools by this time.