

AA/EE/ME 549

Project Guidelines

Due: Wednesday June 12, 2013, midnight.

The final project should be typed, use proper grammar, and contain all of the information below.

Introduction. The introduction should discuss the system you have chosen. What is the importance of the system, how is it used, where does it occur, and what is to be estimated (dynamic states or static parameters or both)?

Model. Give the mathematical equations that will be used to model your system. For dynamic systems, these equations should be for the state and for the measurement. Discuss why the particular formulation (cont/disc/mixed, linear/nonlinear) was chosen, and compare your choice to other choices.

Data. State where the data was obtained (either real data or manufactured). Provide appropriate references and a representative plot. If the data is manufactured, discuss how it was manufactured and why the method is reasonable. For real data, discuss all that you know about the noise in the data and how accurate the data is. You should also discuss, in either case, whether the measurement noise is zero mean, Gaussian, biased, uncorrelated, etc.

Methods. Discuss what estimation method(s) you will be using, and why you have chosen them. Discuss what you expect to see in terms of results. If at all possible, please compare at least two methods of filtering for your system.

Results. The work in the paper should be of sufficient detail that a reader could take the given information and methods and be able to regenerate the results. This goal means that the document should be reasonably self-contained.

Discussion and conclusions. Discuss the results you obtained. Be clear about why they are or are not reasonable. Discuss how the results could be improved or extended.

Appendix. The code that you use should be given in an appendix.