Course Goals

1. Students will understand basic concepts of experimental design and their role in answering engineering questions.

2. Students will be able to choose appropriate graphical and numerical techniques to summarize univariate data and to describe the relationship between two variables.

3. Students will be able to choose an appropriate probabilistic model in several situations (such as modeling measurement error).

4. Students will be able to construct confidence intervals for parameters of several probabilistic models.

5. Students will be proficient in the use of a standard statistical package.

6. Students will understand the underlying assumptions of the particular probabilistic models used in the course and the role that such assumptions play in probabilistic models generally so as to be able to critique studies using such models.

7. Students will be able to read journal articles that rely on statistical methods and to be able to understand the reported results.

8. Students will appreciate some of the limitations of probabilistic modeling.

9. Students will appreciate the ethical concerns inherent in common types of data collection, especially as they regard experimentation on human subjects.

Homework      Besides reading assignments, homework will be assigned daily. Homework assigned during a week will normally be collected on the following Thursday. Pay attention to the homework schedule posted on the course webpage. No late homework will be accepted for any reason but one homework assignment may be missed for any (or no) reason without penalty.

Tests         There will be one take-home, open-book test due on or about October 19.

Projects      There will be two or three small projects. Some or all of them may be group projects. The first one will be due Tuesday, September 28.
Final Exam  The final exam will have a relatively short in-class portion that will be given at both of the times listed above. You can take that at either time. A take-home portion of the exam will be due on Friday, December 17, at 5 PM.

Collaboration  It is perfectly acceptable to help each other. I encourage you to work together on any assignment unless I explicitly say otherwise. Of course academic honesty and common sense require that only honest effort on your part be rewarded; do not turn in “joint” work which is really only the work of someone else. However you do not have to feel guilty turning in work that reflects mostly the good ideas of someone else if you were genuinely working together. You should always indicate who you collaborated with on any work. Failure to do this is a form of academic dishonesty.

See Me  If you are having trouble with the course, if you don’t understand something important, if you have some special circumstance that is getting in the way of performing well in this class, or you just want to talk about the course, see me. While I have office hours, I encourage you to come see me anytime that I am in my office. While I check email regularly and will answer it promptly, email isn’t very useful for answering the more technical questions that might come up in homework. Also, don’t assume that just because you are awake and writing email that I am awake and reading email!

Attendance  I do not require attendance or make attendance any part of the grade. If you miss class for any reason however, you are responsible for determining what you missed. The outline handed out each day will be posted on the web soon after class to help you determine that. Likewise I will try to post any handouts or important announcements. No reason for missing class excuses any late homework. I plan to start on time and end on time and common courtesy to your classmates suggests that you plan likewise. If you must come late or leave early (it happens), be as unobtrusive as you can.

Disabilities  Calvin will make reasonable accommodations for persons with documented disabilities. Students should notify the Coordinator of Services for Students with Disabilities located in the Student Academic Services office. Students requiring such accommodations should meet with me during the first week of class.

Final Grade  Your final grade $F$ will be computed from your grades (suitably normalized) on the homework ($H$), projects ($P$), test ($T$), and final exam ($E$) by the following formula:

$$F = .30E + .10H + .15P + .30\max(E,T) + .15\max(E,H)$$

Exceptions  I reserve the right to make changes or exceptions to the above policies either for the whole class or for individuals. The ultimate goal in this course is learning and formal requirements should not unnecessarily stand in the way of this. As a consequence, if you (individually or collectively) think that any of the above conditions are interfering with learning, let me know and we’ll see what can be done.