Stat 602X Syllabus  
Modern Multivariate Statistical Learning  
Spring 2013

**Topics:** Among the topics considered will be linear methods of prediction and classification, basis expansions and regularization, kernel smoothing methods, variance-bias trade-offs, inference and model averaging, additive models and trees, boosting, neural nets, support vector machines, prototype methods, unsupervised learning, random forests, and ensemble learning.

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Official Office Hours:  2-3 TR in Black Engineering  
(Outside of class and official hours, Vardeman is usually in Black Hall)

**Course Assistant:** None

**Course Web Page:** http://www.public.iastate.edu/~vardeman/stat602/stat602vard.html

**Textbooks:** A list of useful books can be found on the course web page. None of them is really appropriate as a single text for the course. Topic selection will be more or less in line with HTF. The typed "Course Outline" (both 2011 and 2013 versions) will serve as a quasi-text and there may be some summary slides posted on the course page as Vardeman has time to make them.

**Class Schedule:** 12:40-2 PM  1012 Coover Hall

**Final Exam:** F May 10, 9:45-11:45 AM  1012 Coover Hall

**Course Grading:**  
- Mid-Term Exam  100pts  M March 11, 7-9 PM  3105 Snedecor  
- Final Exam  100pts  Friday May 10, 9:45-11:45  
- Homework  +/- 10pts  (see below)

**Assignments:** Individual students will prepare and turn in the homeworks by announced due dates. You may discuss these assignments with fellow students and ask Vardeman for limited help with them. But each individual must write up his or her own assignments for turning in in .pdf form. **This is an integrity issue.** Do **not** copy what someone else has written and turn it in as your own, and you must write your own code where it is needed.
Vardeman will post these V1.0 solutions on a Web page where you will be able to see them all. After seeing the solutions produced by others, you may submit V2.0 of your solutions within a week of the original due date (filling in gaps you had on your own, and correcting problems in your V1.0 solutions) again doing your own work preparing the .pdf. Vardeman will not carefully mark these, but rather only at the end of the term review your solutions, to see that ultimately you produced complete correct solution sets. He will then accordingly add or subtract as much as 10pts from your exams total. (He will add 10 points if your V1.0 solutions are uniformly essentially complete and correct, add 0 points if seriously done V1.0 initial solutions have some significant gaps/errors that are wholly fixed in V2.0, and subtract 10 points if V1.0 solutions are not taken seriously or significant gaps/errors remain in V2.0 solutions.)

Accommodation for Students with Disabilities

Iowa State University compiles with the American with Disabilities Act and Sect 504 of the Rehabilitation Act.

If you have a disability and anticipate needing accommodations in this course, please contact Vardeman before the end of the 2nd week of the semester. Later requests for accommodations may not be honored. Anyone requesting an accommodation will need to obtain a SAAR form with recommendations for accommodations from the Disability Resources Office, located in Room 1076 of the Student Services Building.