Stat/IE 531 Syllabus
Spring 2001

Instructor: Prof. Steve Vardeman
304D Snedecor Hall, ISU, Ames, IA 50011-1210
Phone: 515-294-2535
Fax: 515-294-5040
vardeman@iastate.edu
http://www.public.iastate.edu/~vardeman/

Course Grader: Dewi Rahardja
Phone: 515-294-6099
gaby@iastate.edu

Official Office Hours: 1-3 Tu, Th

Course Requirements: 2 Exams (1 in class around mid term and 1 during finals week)
Approximately 5 (substantial) Homework Sets

Homework Policy: You may work together on the homework and even ask Vardeman for help, but Every person must independently write up and turn in his or her own version of the solutions.

Grading: For those who turn in all the homework (essentially on time), course grades will be based primarily on the two exams (equally weighted). For such people, Vardeman will however, reserve the right to raise an exam-based grade by as much as 1/3 of a letter grade for exceptionally good homework or drop an exam-based grade by as much as 1/3 of a grade for clearly substandard homework. For those who fail to turn in a significant portion of the homework, Vardeman may subtract as much as a whole letter grade from an exam-based grade in determining a course grade.

Texts: *Statistical Quality Assurance Methods for Engineers, by Vardeman and Jobe* (1999, John Wiley and Sons)
Graduate Lectures and Problems in Quality Control and Engineering Statistics, Course Notes by Vardeman to Supplement the Text

Current Course Resources: http://www.public.iastate.edu/~vardeman/stat531/stat531.html

Topics and Tentative Schedule:
- Introduction and a Useful Preliminary from Probability (~.5 week)
- Statistics and Engineering Measurement (~3 weeks)
- Process Monitoring-Standard Methods (~2.5 weeks)
- Process Monitoring-Theory (~3 weeks)
- Engineering Control and Stochastic Control Theory (~1.5 weeks)
- Process Characterization and Capability (~1.5 weeks)
- Sampling Inspection-Methods (~1 week)
- Sampling Inspection-Theory (~1.5 weeks)

Some Other Books: *Statistical Quality Control: Theory and Practice*, Wetherill and Brown, Chapman and Hall, 1991
Quality Control and Industrial Statistics, 5th Edition, Duncan, Irwin, 1986
Basic Engineering Data Collection and Analysis, Vardeman and Jobe, Duxbury-Thomson Learning, 2001
Statistics for Engineering Problem Solving, Vardeman, PWS Publishers, 1994