**STA 4222 Statistical Designs**

**Prerequisites:** STA 2023 or equivalent
**Textbook:**

*Quality Improvement through Planned Experimentation* , 2nd Ed., by Ronald D. Moen, Thomas W. Nolan, lloyd P. Provost. Mc Graw Hill, 1999.

**Reference Books:**

Planning of Experiments, *D. R. Cox*. John Wiley & Sons. 1958

*Statistics for Experimenters*, by Box, Hunter and Hunter.

**Course Description:**

This course is about planned experimentation to make improvements. Statistical methods of planned experimentation are powerful aids to managers, designer, engineers, scientists, and technicians. But these methods have been applied in only a small fraction of the circumstances in which they would have been useful. The aim of this course is to provide a system of planned experimentation that meets the essential needs of experimenters but requires a lower level of mathematical and statistical sophistication.

**Course Coverage:**

 Improvement of Quality using Control Charts

 Evaluating Measurement Systems

 Testing a Change

 Principles for Design and Analysis of Planned Experiments

 Experiments with One or More Factors

 Reducing the Size of Experiments

 Evaluating Sources of Variation

**Grading System:**

There will be six bi-weekly quizzes (5% each), two midterm exams (20% each) and one final comprehensive exam (30%). Exercises from the text (and elsewhere) will be assigned regularly as homework problems. Quizzes will base on the assigned homework problems. Make-up exams will be administered only under exceptional circumstances with writing excuses.

**Software Package:** Minitab will be used to illustrate the theory and perform the computations.

**Attendance:** The instructor reserves the right to make any changes she considers academically advisable. Note that it is your responsibility to attend the class and keep track of the proceedings.

**Disability policy statement**

In compliance with the Americans with Disabilities Act (ADA), students who require special accommodation due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) -- in Boca Raton, SU 133 (561-297-3880); in Davie, MOD 1 (954-236-1222); in Jupiter, SR 117 (561-799-8585); or at the Treasure Coast, CO 128 (772-873-3305) – and follow all OSD procedures.

**Honor Code policy statement**

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the university mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001 at
<http://www.fau.edu/regulations/chapter4/4.001_Code_of_Academic_Integrity.pdf>