

**Course Syllabus**  
**Statistical Quality Control**  
**Spring 2007**

**Course** ST 575 – Statistical Quality Control

**Instructor** Dr. Michael Adams  
371 Alston Hall  
Office Phone: 348-8911  
[badams@cba.ua.edu](mailto:badams@cba.ua.edu)

**Office Hours** Tuesday and Thursday 1:30 – 3:00 pm (Other times by appointment)

**Required Text** *Introduction to Statistical Quality Control*, 5<sup>th</sup> Edition, D. C. Montgomery

**Prerequisite** ST 560 Introduction to Applied Statistics (or equivalent)

**Description** An overview of quality philosophies with emphasis on problem solving. Coverage of statistical tools and strategies helpful in process improvement. Significant concentration on statistical process monitoring tools such as Shewhart, CUSUM, and EWMA control charts. Special issues such as monitoring autocorrelated data and multivariate observations will be addressed. A brief overview of acceptance sampling and design of experiments is also included.

**Objectives** Students be able to formulate a statistical problem solving strategy. The strategy would include the selection and implementation of appropriate process monitoring and improvement schemes. Additionally, the student will be able to interpret and communicate the results of the process improvement techniques.

**Policies** Homework will be assigned and graded. No late assignments will be accepted. The following weighting scheme will be used to determine the semester grade:

Homework	30%
Exam I	35%
Final Exam	<u>35%</u>
	100%

**Academic Misconduct** will not be tolerated. All acts of dishonesty in any work constitute academic misconduct. The Academic Misconduct Disciplinary Policy will be followed in the event of academic misconduct.

**Disabilities:** If you need to request the accommodation of a disability, you must contact the Office of Disability Services at 348-4285 as soon as possible. You may then contact the instructor to schedule an appointment to discuss your request.

**Severe Weather** is always a possibility. In the event of an emergency, we will adhere to the following actions in accordance with University policies.

**Fire/Fire Alarm:** Evacuate the building and stay out of the building at a safe distance until authorized to return.

**Tornado Warning:** Move to the Lower Level, inside classrooms, offices or corridors. Remain until the warning has expired. Classes are cancelled until the warning expires.

Tuesday			Thursday		
<b>Final Exam:</b> Monday May 7 <sup>th</sup> 8:00-10:30am			C1	Introduction READ Chapter 1.1	1/11
C2	Quality Philosophies READ 1.2 – 1.3	1/16	C3	Six Sigma – DMAIC Process READ 1.4	1/18
C4	Magnificent Seven / Control Charts READ Chapter 4	1/23	C5	$\bar{X}$ and R Charts READ 5.1 – 5.2.5	1/25
C6	ARLs and OC Curves READ 5.2.6 – 5.2.7	1/30	C7	$\bar{X}$ and S Charts READ 5.3 – 5.6	2/1
C8	p - charts READ 6.1 – 6.2	2/6	C9	c - charts READ 6.3 – 6.5	2/8
C10	CUSUM charts I READ 8.1 – 8.1.5	2/13	C11	CUSUM charts II READ 8.1.6 – 8.1.11	2/15
C12	EWMA charts READ 8.2	2/20	C13	Moving Average charts READ 8.3	2/22
C14	Short Production Runs READ 9.1	2/27	C15	Cuscore charts Chapters 9.7	3/1
<b>C16</b>	<b>Review for Test 1 Chapters 1, 4, 5, 6, and 8</b>	<b>3/6</b>	<b>C17</b>	<b>Test I</b>	<b>3/8</b>
C18	Autocorrelated Data I READ 9.4 – 9.4.2	3/20	C19	Autocorrelated Data II Read 9.4.3	3/22
C20	Economic Designs READ 9.6	3/27	C21	Change Point Methods READ 9.8	3/29
C22	Regression-based Methods READ 9.9	4/3	C23	Nonparametric Methods READ 9.9.7	4/5
C24	Multivariate T <sup>2</sup> charts READ 10.1 – 10.3	4/10	C25	Multivariate EWMA charts READ 10.4	4/12
C26	Interpreting Multivariate signals READ 13.5	4/17	C27	Capability Indices I READ 7.1 – 7.3	4/19
C28	Capability Indices II READ 7.4 – 7.8	4/24	C29	Acceptance Sampling READ 14.4	4/26
C30	The Role of Designed Experiments	5/1	C31	Review for Final	5/3

