



IET 319-301



**Quality Control
Course Syllabus
Spring 2010**

[Department of Industrial and Engineering Technology](#)
College of Science and Technology
Morehead State University

Course Description

IET 319 Quality Control. (3-0-3); I, II. Designed to provide analytical and statistical inference techniques for process and manufacturing product control.

Instructor

Dr. Hans Chapman
209 Lloyd Cassity Building
Morehead State University
Tel: (606)-783-9339
E-mail: h.chapman@moreheadstate.edu

Office Hours:

Monday & Wednesday: 12.40 PM – 2.50 PM
Tuesday & Thursday: 9.30 AM – 11.30 AM

Course Contents

Students will learn how to perform quality control using mathematical methods with a focus on statistical tools. Two major areas of Statistical Quality Control, on which student will extensively work on are Statistical Process Control and Acceptance Sampling Techniques. Furthermore, Students will understand the mission of Quality Control as part of Quality Assurance and Total Quality Management.

Course Objectives

As the conclusion of the course, student should be able to:

- 1- Demonstrate general understanding of total quality management principles and practices (**Assessed by Assignment 1, Online discussions, and Group Project.**)

- 2- Understand the fundamentals of statistics: measures of central tendency and dispersion and the normal distribution (**Assessed by Assignment 2, Online discussion, and Group Project.**)
- 3- Understand and apply the tools of the Statistical Process Control: Pareto diagram, check sheets, process flow diagram, and scatter diagram (**Assessed by Assignment 3, Final exam, and Group Project.**)
- 4- Develop control charts for variables using equations and MINITAB software (**Assessed by MINITAB Assignments 1 and 2, Assignment 4, Final Exam, and Group Project.**)
- 5- Develop different types of control charts for attributes using equations and MINITAB software (**Assessed by MINITAB Assignments 2 and 3, Assignment 5, Final Exam, Online discussion, and Group Project.**)
- 6- Understand the concept of probability and reliability (**Assessed by Assignments 6 and 7, Online discussion, and Final Exam**)

Reading Materials

Besterfield, H. D. (2008). *Quality Control* (8th Ed.). New Jersey: Upper Saddle River Prentice Hall. 7th edition

Course Requirements

1. Examinations
To identify the students understanding of the topics covered, problems, and multiple-choice, true/false, and short essay questions will be used in the exams.
2. Group Project
Students will be divided into groups to work on projects of their choice at local organizations in different businesses: Manufacturing, Service, and Construction. *Active participation from every student in these projects is very essential.* These group projects are important tools to enhance the students learning and prepare them for a competitive business environment. These projects are to be performed through different stages and discussions during the semester as we proceed in the material. This will greatly enhance the students' learning and give the opportunity for every student to learn from all the other projects. The students' evaluation in these projects will depend mainly on their contribution in their projects and the amount of improvement/saving they made in the organizations.
3. Weekly Assignments
There will be 10 weekly assignments (including 3 assignments on MINITAB software) given throughout the semester. No late assignment will be accepted without an approval from instructor. Collaboration in the form of discussion for

formulation of solutions or results is encouraged; however, each individual must work independently to create the final homework solution. There will be one grading scale deduction from the assignment total grade for each delay week after the due date. The assignments due before each exam must be submitted before that exam date. Otherwise, they will NOT be accepted. Should a student need to submit an assignment late, the instructor must be consulted beforehand. Otherwise, it will NOT be accepted.

4. Weekly Online Discussion Board

Students will participate in ten (10) weekly online discussions on various subjects pertaining to the course materials, homework problems, and so on. They should read the questions posted by the instructor in the Discussion Board and answer them and also, critique other students' responses.

5. Hardware and Software

Students need to have a scanner to scan their works for online submittals. Also, MINITAB software is used for computer homework assignments, as well as the group project. The information on obtaining MINITAB will be given by the instructor.

6. Online Home Page:

Students are to complete their home page in Communication section of Black board. They should complete all the sections in the home page, except for the favorite website. The due for this requirement is by the end of the second week of the semester.

Academic Honesty

While teamwork and group learning is highly recommended, no form of plagiarism would be tolerated.

Americans with Disabilities Act (ADA)

In compliance with the ADA, all students with a documented disability are entitled to reasonable accommodations and services to support their academic success and safety. Though a request for services may be made at any time, services are best applied when they are requested at or before the start of the semester. To receive accommodations and services the student should immediately contact the Disability Services Coordinator in the Office of Academic and Career Services, 223 Allie Young Hall, 606-783-5188, www.moreheadstate.edu/acs/

Campus Safety Statement

Emergency response information will be discussed in class. Students should familiarize themselves with the nearest exit routes in the event evacuation becomes necessary. You should notify your instructor at the beginning of the semester if you have special needs or will require assistance during an emergency evacuation. Students should familiarize themselves with emergency response protocols at:

<http://www.moreheadstate.edu/emergency>.

Course Organization Policies

Evaluation

<u>Activity</u>	<u>Points</u>	<u>Percentage</u>
Syllabus Quiz	10	1%
Home Page	10	1%
Online Discussions (10)	100	10%
Weekly Assignments (7)	140	14%
MINITAB Assignments (3)	60	6%
Group Project	200	20%
Exams 1 and 2	200	20%
Portfolio	40	4%
Final Exam	200	20%
Participation	40	4%
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Total	1000	100%

Note: 90-100% = A 80-89% = B 70-79% = C 60-69% = D Below 60% = E

WEEK 1 & 2			WEEK 3 & 4		
Date	Lecture/Lab	Reading	Date	Lecture/Lab	Reading
1/11	Syllabus and Course Introduction Intro. Quality Syllabus Quiz given	Ch. 1	1/25	Fund. Of Statistics Online Discussion Board 2 ASSIGNMENT 1 due, ASSIGNMENT 2 given GROUP PROJECTS Assignment	Ch. 4
1/19	Total Quality Management TQM Tools and Techniques Online Discussion Board 1 Syllabus Quiz due ASSIGNMENT 1 given	Ch. 2 Ch. 3	2/1	Group Caucus Selection of team leaders ASSIGNMENT 2 due MINITAB ASSIGNMENT 1 given	
WEEK 5 & 6			WEEK 7 & 8		
2/8	Fund. Of Statistics (Cont.) Online Discussion Board 3 ASSIGNMENT 3 given	Ch. 4	2/22	MINITAB SOFTWARE Discussion Board 4 and MINITAB ASSIGNMENT 1 given	
2/15	ASSIGNMENT 3 due EXAM I (Wed., Feb 17) GROUP PROJECTS ASSIGNED		3/1	Control Chart for Variables MINITAB ASSIGNMENT 1 due, Discussion Board 5 and MINITAB ASSIGNMENT 2 given	Ch. 5
WEEK 9 & 10			WEEK 11 & 12		
3/8	GROUP PROJECT FOCUS MINITAB ASSIGNMENT 2 due		3/22	Control Chart for Attributes Discussion Board 6 and MINITAB ASSIGNMENT 3 given	Ch. 8
3/15 - 3/19	SPRING BREAK – NO CLASS		3/29	Probability MINITAB ASSIGNMENT 3 due Discussion Board 7 and ASSIGNMENT 7 given	Ch. 7
WEEK 13 & 14			WEEK 15 & 16		
4/5	ASSIGNMENT 7 due EXAM II (Wed., April 7)		4/19	Reliability Group Project Updates due Discussion Board 8 & 9 and ASSIGNMENT 8 & 9 given	Ch. 11
4/12	Group Project Analysis		4/26	GROUP PRESENTATIONS ASSIGNMENT 8 & 9 due PORTFOLIOS DUE Discussion Board and ASSIGNMENT 10 (Review) given	

Final Exam: Tuesday 05-04-10

NOTE: This syllabus is subject to change at the discretion of the instructor to accommodate student and/or instructional needs.