METROPOLITAN STATE COLLEGE OF DENVER
Office of Academic Affairs

REGULAR COURSE SYLLABUS

School of Professional Studies

Department: Engineering Technology Studies

Semester(s) Offered: Spring

Prefix & Course Number: MET 3300 Crosslisted With*: ___

Course Title: Statistical Process Control

Credit Hours: 3 (3+0)

Contact Hours: Lecture 45 Lab 0 Internship ___ Practicum ___

Schedule Type(s): L Grading Mode(s): L

Repeat* (Variable topics): ___

*(Pertinent only if the course can be repeated; enter maximum number of hours that can be earned by taking this course.)

Restrictions (Variable Topics Course): NONE

Prerequisite(s): MET 1310 and MET 3000 with grades of “C” or better

Corequisite(s): NONE

Prerequisite(s) or Corequisite(s): NONE

Banner Enforced:

Prerequisite(s): MET 1310 and MET 3000 with grades of “C” or better
Corequisite(s): ___
Prerequisite(s) or Corequisite(s): ___

Catalog Course Description:

This course focuses on statistical process control with emphasis on process capability, troubleshooting, analysis of variance and hypothesis testing.

Required Reading and Other Materials will be equivalent to (Title, Author, Publisher, Copyright Date):


APPROVED:

Department Chair/Institute Director

Dean

Associate VP, Academic Affairs

*If crosslisted, attach completed Course Crosslisting Agreement Form
Prefix and Course Number: MET 3300

SPECIFIC (MEASURABLE) STUDENT BEHAVIORAL LEARNING OBJECTIVES:

Upon completion of this course the student should be able to demonstrate:
1. Apply new control techniques using statistically derived justification of solutions.
2. Prepare histograms and deviation/distribution data for evaluation/illustration purposes.
3. Troubleshoot proper attribute data and apply to decision making techniques.
4. Estimate and compare variability by "F-test" and "range-squared-test."
6. Troubleshoot variable data using experimental design, latin square, and interaction techniques.
7. Analyze variable data relationships using scatter diagrams, regression analysis, and correlation coefficients.
8. Plan and conduct an ANOVA.

OUTLINE OF COURSE CONTENT (Major Topics and Subtopics):
I. Review the Quality Fundamentals
   A. Histograms
   B. Calculations
   C. Standard Deviations
   D. Types of Distributions
II. Basic Troubleshooting Concepts
III. Troubleshooting with Attribute Data
    A. Decision Techniques
    B. One, Two and Three Factors
    C. Interactions
IV. “Outlines” or “Outliers”
V. Estimating and Comparing Variability
    A. F-test
    B. Range Squared Test
VI. Test to Compare Process Averages
    A. Tukey Test
    B. C-test
    C. ANOM
VII. Troubleshooting with Variables Data
    A. Experimental Design
    B. Latin Square
    C. Interactions
VIII. Multi-Level Variables Analysis
IX. Relationships Between Variables
    A. Scatter Diagrams
    B. Regression Analysis
    C. Correlation Coefficients
X. Analysis of Variance (ANOVA)
XI. Taguchi Techniques in Quality Assurance

EVALUATION OF STUDENT PERFORMANCE:
15% Homework
30% Quizzes
30% Examinations
25% Final Examination