Student Outcomes and Performance Indicators – Faculty Assessment
Department of Engineering & Engineering Technology
College of Professional Studies
Metropolitan State University of Denver

MET 3300 (9)

STATISTICAL PROCESS CONTROL

Semester/year

Specific, Measurable Student Behavioral Learning Objectives:
Upon completion of this course the student should be able to:

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 teclmiques.
4. Estimate and compare variability by"F-test" and "range-squared-test."
5. Compare and evaluate data using process averages applying "Tukey," "C-test," and "ANOM" tests.
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.
9. Apply Taguchi Techniques (pre-manufacturing quality assurance).

ABET	Competency Area	Data Collection
b	an ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies	
c	an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes	
f	an ability to identify, analyze, and solve broadly-defined engineering technology problems	

ADDITIONAL COMMENTS:

PLEASE:

1. MAKE SURE ALL REFERENCES ARE IN Y DRIVE;
2. SAVE THIS FILE UNDER THE COURSE NUMBER, FOR EXAMPLE: CET1000 SPRING 2018.DOC;
3. SEND YOUR REPORT TO LINDA;

_____ _____

<Name> <Date>

Following tables define the Performance Indicators for each of the Student Outcomes a through k

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ABET b: an ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies				
	Unsatisfactory	Developing	Satisfactory	Exemplary
Use science, math, and engineering concepts to conduct qualitative analysis	Unaware of needs for qualitative analysis	Working on the knowledge and skills for qualitative analysis	Proper analysis with 70% partial solution or better	Proficient in using selected tools for qualitative analysis
Use science, math, and engineering concepts to conduct quantitative analysis	Unable to identify tool for the needed quantitative analysis	Working on the knowledge and skills for quantitative analysis	Proper analysis with 70% partial solution or better	Proficient in using selected tools for quantitative analysis
Develop designs of products, systems, or processes that respond to authentic needs	Unaware of or not understanding the needs	Knowledge or skill set not enough for solving the engineering technology problem	70% partial solution or better	Proper solutions obtained

ABET c: an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes				
	Unsatisfactory	Developing	Satisfactory	Exemplary
Select, set up, and use equipment for experiments	Unable to identify proper equipment	Unable to use most of the identified equipment	Able to use the equipment under supervision	Conduct test and measurement properly and safely
Select, set up, and use data collection and analysis software	Not understanding the needs of data collection	Unable to use most of the identified software	Able to use the software under supervision	Properly use of the identified software
Understand the results	Not understanding the results	Some understanding of the results	Understand the results with help	Properly interpret and present the results

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ABET f: an ability to identify, analyze, and solve broadly-defined engineering technology problems				
	Unsatisfactory	Developing	Satisfactory	Exemplary
Identify and describe technical problems	Unable to understand problem	Understand the problem but unable to provide solutions	Some solutions or ideas in solving the problem	Proper solution obtained
Recognize standard procedures in solving specific technical problem	Unaware of standard procedures	Realize standard solution procedures but unable to implement	Some solutions are obtained	Properly use standard solution procedure or provide alternate ways of solutions
Manage information and solve technical problems	Unable to gather information needed	Unaware of the importance of managing and documenting information	Some management and documentation of information	Proper documentation and management of information