

1. Course Title:

Quality Control
IET 380 – 4 Credits

EET Program Requirement

Prerequisite: MATH153

This is a Technical content course under ABET Criterion 5

2. Faculty Member Information:

Instructor: Darren Olson, Ph.D.

Office: Hogue Hall Room 303

Phone: 509-963-1913

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3. Course Description:

Provides the foundation necessary to understand and apply statistical quality control techniques, product reliability procedures, and the management aspects of quality assurance.

4. Textbook and other required materials for the course:

Besterfield, D.H., *Quality Control, 8th Ed.*, Pearson, 2009.

5. Specific Learner and Expressive Outcomes and Assessment Strategies:

ABET #	Learner Outcomes	Assessment
	1. The student will be able to discuss the contemporary principles of quality control, quality improvement, and process management, and relate these principles to costs, financial performance, and competitive advantage.	The Student will be able to participate in class discussions and activities, complete individual assignments, and exams.
3.k.	2. The student will describe how quality is connected to leadership style, strategic management, operations management, and human relations practices.	The Student will be able to participate in class discussions and activities, complete individual assignments, and exams.
	3. The student will describe the information and record keeping systems required for achieving quality and complying with quality system requirements.	The Student will be able to participate in class discussions and activities, complete individual assignments, and exams.
	4. The student will be able to describe the fundamental principles of statistical probability, particularly for the normal, binomial, and Poisson distributions, and will be able to correctly apply these principles in performing probability calculations.	The Student will be able to participate in class discussions and activities, complete individual assignments, and exams.
9.c.	5. The student will be able to apply Statistical Process Control (SPC) techniques for variables and attributes.	The Student will be able to participate in class discussions and activities, complete individual assignments, and exams.
	6. The student will be able to utilize statistics and probability in support of electrical/ electronic systems.	The Student will be able to participate in class discussions and activities, complete individual assignments, and exams.
	7. The student will be able to describe the essential role that proper use of measurement systems plays in quality control and improvement.	The Student will be able to participate in class discussions and activities, complete individual assignments, and exams.
	8. The student will be able to select and specify an appropriate measurement system for common quality control and quality improvement project scenarios.	The Student will be able to participate in class discussions and activities, complete individual assignments, and exams.

	9. The student will be able to describe the various aspects measurement system maintenance and calibration, and will be able to conduct a gauge reliability and repeatability study.	The Student will be able to participate in class discussions and activities, complete individual assignments, and exams.
	10. The student will be able to employ various industry-standard quality improvement tools, such as the seven tools of quality management and other widely-used techniques.	The Student will be able to participate in class discussions and activities, complete individual assignments, and exams.
	11. The student will be able to select and follow appropriate acceptance sampling techniques.	The Student will be able to participate in class discussions and activities, complete individual assignments, and exams.

6. Course Topics and Schedule:

Week of	Reading Assignments and Other Information
	Course Introduction
	Chapter 1: Introduction to Quality
	Chapter 2: Total Quality Management – Principles and Practices
	Chapter 3: Total Quality Management Tools and Techniques
	Exam 1 Chapter 4: Fundamentals of Statistics
	Chapter 5: Control Charts for Variables
	Chapter 6: Additional SPC Techniques for Variables
	Exam 2 Chapter 7: Fundamentals of Probability
	Chapter 8: Control Charts for Attributes
	Chapter 9: Lot-By-Lot Acceptance Sampling by Attributes
	Exam 3 Chapter 10: Acceptance Sampling Systems
	Chapter 11: Reliability
	Chapter 12: Management and Planning Tools
	Final exam

7. Grading:

Student Assessment Criteria		
Assignments	30%	
Exams	60%	
Participation/Involvement**	10%	
≥ 92.0 A	≥ 80.0 B-	≥ 68.0 D+
≥ 90.0 A-	≥ 78.0 C+	≥ 62.0 D
≥ 88.0 B+	≥ 72.0 C	≥ 60.0 D-
≥ 82.0 B	≥ 70.0 C-	< 60.0 F

8. ADA Statement:

Students who have special needs or disabilities that may affect their ability to access information and or material presented in this course are encouraged to contact me or Robert Harden, ADA Compliance Officer, Director, ADA Affairs and Students Assistance on campus at 963-2171 for additional disability related educational accommodations.