

ILLINOIS VALLEY COMMUNITY COLLEGE



COURSE OUTLINE

DIVISION: Workforce Development

COURSE: MET 2201; Statistical Quality Control Techniques

Date: Spring 2014

Credit Hours: 3

Prerequisite(s): MTH 1206 or consent of instructor

Delivery Method: **Lecture** **2 Contact Hours** (1 contact = 1 credit hour)
 Seminar **0 Contact Hours** (1 contact = 1 credit hour)
 Lab **2 Contact Hours** (2 contact = 1 credit hour)
 Clinical **0 Contact Hours** (3 contact = 1 credit hour)
 Online
 Blended

Offered: **Fall** **Spring** **Summer**

IAI Equivalent –**Only for Transfer Courses**–go to <http://www.itransfer.org>.

CATALOG DESCRIPTION:

This course includes fundamentals of statistics including std. deviation; normal curve frequency distribution; central limit theorem; construction and use of variable control charts (X and R charts); study of process capability; control charts for attributes such as P & C charts; basic concepts of acceptance sampling; various sampling plans; AQL; and introduction to the reliability of the product. Students will work on SPC Plus software.

GENERAL EDUCATION GOALS ADDRESSED

[See the last page of this form for more information.]

Upon completion of the course, the student will be able:

[Choose those goals that apply to this course.]

- To apply analytical and problem solving skills to personal, social and professional issues and situations.
- To communicate orally and in writing, socially and interpersonally.
- To develop an awareness of the contributions made to civilization by the diverse cultures of the world.
- To understand and use contemporary technology effectively and to understand its impact on the individual and society.
- To work and study effectively both individually and in collaboration with others.
- To understand what it means to act ethically and responsibly as an individual in one's career and as a member of society.
- To develop and maintain a healthy lifestyle physically, mentally, and spiritually.
- To appreciate the ongoing values of learning, self-improvement, and career planning.

EXPECTED LEARNING OUTCOMES AND RELATED COMPETENCIES:

[Outcomes related to course specific goals.]

Upon completion of the course, the student will be able to:

1. Understand and apply the basic concepts of statistical quality control
2. Apply the various principles of statistical quality control to everyday industrial situations and problems.
3. Recognize and apply statistical quality control as a problem solving tool

COURSE TOPICS AND CONTENT REQUIREMENTS:

- 1.0 Introduction to Quality Assurance
- 2.0 Introduction to Statistics
- 3.0 Control Charts for Variables
- 4.0 Probability
- 5.0 Control Charts for Attributes
- 6.0 Lot by Lot Acceptance Sampling
- 7.0 Additional Sampling Plans
- 8.0 Reliability
- 9.0 Additional Quality Concepts

INSTRUCTIONAL METHODS:

Lecture
Lab Work
Computer Based Training

INSTRUCTIONAL MATERIALS:

Statistical Quality Design and Control, second edition, ISBN 0-13-041344-5
SPC Plus Software

STUDENT REQUIREMENTS AND METHODS OF EVALUATION:

1. Tests
2. Quizzes
3. Homework
4. Lab Performance

OTHER REFERENCES

Course Competency/Assessment Methods Matrix

MET 2201; Statistical Quality Control Techniques		Assessment Options																																
For each competency/outcome place an "X" below the method of assessment to be used.	Assessment of Student Learning	Article Review	Case Studies	Group Projects	Lab Work	Oral Presentations	Pre-Post Tests	Quizzes	Written Exams	Artifact Self Reflection of Growth	Capstone Projects	Comprehensive Written Exit Exam	Course Embedded Questions	Multi-Media Projects	Observation	Writing Samples	Portfolio Evaluation	Real World Projects	Reflective Journals	Applied Application (skills) Test	Oral Exit Interviews	Accreditation Reviews/Reports	Advisory Council Feedback	Employer Surveys	Graduate Surveys	Internship/Practicum /Site Supervisor Evaluation	Licensing Exam	In Class Feedback	Simulation	Interview	Written Report	Assignment		
	Direct/ Indirect	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	I	I	I	I	D	D								
1.0	Introduction to Quality Assurance							X	X																									
2.0	Introduction to Statistics							X	X																									
3.0	Control Charts for Variables			X	X			X	X						X																			
4.0	Probability				X			X	X						X																			
5.0	Control Charts for Attributes				X			X	X						X																			
6.0	Lot by Lot Acceptance Sampling				X			X	X						X																			
7.0	Additional Sampling Plans				X			X	X						X																			
8.0	Reliability			X	X			X	X						X																			
9.0	Additional Quality Concepts			X				X	X						X																			