DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING
INDUSTRIAL ENGINEERING PROGRAM, BSC.

Course Syllabus

1. **Course number and name**
   IE 370 Quality control

2. **Credits and contact hours**
   (3+0) 3 credit hours, 3 contact hours

3. **Course Type**
   Onsite

4. **Instructor's or course coordinator's name**
   Dr. Hanan Saleet

5. **Textbook information**
   Quality Improvement,. Besterfield , D., Pearson Educatoin Inc., 9th edition, 2012, ISBN-10: 1292022302, ISBN-13: 978-1292022307

6. **Specific course information**
   a. **Catalog description**
   Quality, quality assurance and quality management, statistical quality control, control charts for variables and attributes, lot sampling and acceptance sampling plans, process capability assessment, six sigma and Zero Defect Quality, ISO 9000.
   b. **Prerequisites or co-requisites**
   Prerequisite: IE 231 Statistics and Probability 1

   c. **The course is:**
   Required in the Industrial Engineering program.

7. **Specific goals for the course**
   a. **Course outcomes:**
   After completion of the course, students are expected to be able to:
   1. Discuss statistical quality control as a tool for total quality management and
   2. Construct control charts for variables
   3. Construct control charts for attributes
   4. Solve for process capability
   5. Illustrate Six sigma, Zero Defect Quality and ISO 9000

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b. The following student outcomes are addressed by the course:

SO-(e) an ability to identify, formulate, and solve engineering problems
SO-(i) a recognition of the need for, and an ability to engage in life-long learning.
SO-(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
SO-(pc-2) ability to apply advanced statistics and probability to engineering problems

8. Learning Outcomes and their Alignment with Program Educational Objective (PEO's), Methods of Delivery, and Assessment Methods:

Learning Outcomes	Program PEOs	Method of Delivery	Assessment Method
Course Outcomes			
CO(1)- Discuss statistical quality control as a tool for total quality management and	-	Lectures	Assignment and Discussion
CO(2)- Construct control charts for variables	-	Lectures (Example and Problems)	Assignment and Quiz
CO(3)- Construct control charts for attributes	-	Lectures (Example and Problems)	Assignment and Quiz
CO(4)- Solve for process capability	-	Lectures (Example and Problems)	Assignment and Quiz
CO(5)- Illustrate Six sigma, Zero Defect Quality and ISO 9000	-	Lectures (Example and Problems)	Assignment and Quiz
Student Outcomes			
SO-(e) an ability to identify, formulate, and solve engineering problems	2	Lectures (Example and Problems)	Discussion Board and Midterm Exam
SO-(i) a recognition of the need for, and an ability to engage in life-long learning.		Lectures (Example and Problems)	Discussion Board

SO-(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice		Lectures (Example and Problems)	Discussion Board and Midterm Exam
SO-(pc-2) ability to apply advanced statistics and probability to engineering problems		Lectures (Example and Problems)	Discussion Board and Midterm Exam

9. Weekly Teaching Plan

Lecture	Topic	Method of Delivery
Lec_1	Chapter 1: Introduction to Quality Improvement	Lecture
Lec_2	Chapter 1: Introduction to Quality Improvement	Lecture
Lec_3	Chapter 1: Introduction to Quality Improvement	Lecture
Lec_4	Chapter 1: Introduction to Quality Improvement	Lecture
Lec_5	Chapter 1: Introduction to Quality Improvement	Lecture
Lec_6	Chapter 1: Introduction to Quality Improvement	Lecture
Lec_7	Chapter 4: Statistical Process Control	Lecture
Lec_8	Chapter 4: Statistical Process Control	Lecture
Lec_9	Chapter 4: Statistical Process Control	Lecture
Lec_10	Chapter 4: Statistical Process Control	Lecture
Lec_11	Chapter 4: Statistical Process Control	Lecture
Lec_12	Chapter 4: Statistical Process Control	Lecture
Lec_13	Chapter 6: Control Charts for Variables	Lecture
Lec_14	Chapter 6: Control Charts for Variables	Lecture
Lec_15	Chapter 6: Control Charts for Variables	Lecture
Lec_16	Chapter 6: Control Charts for Variables	Lecture
Lec_17	Chapter 6: Control Charts for Variables	Lecture
Lec_18	Chapter 6: Control Charts for Variables	Lecture
Lec_19	Chapter 6: Control Charts for Variables	Lecture
Lec_20	Chapter 6: Control Charts for Variables	Lecture
Lec_21	Chapter 6: Control Charts for Variables	Lecture
Lec_22	Chapter 6: Control Charts for Variables	Lecture
Lec_23	Chapter 6: Control Charts for Variables	Lecture

Lec_24	Chapter 6: Control Charts for Variables	Lecture
Lec_25	Chapter 7: Additional SPC Techniques for Variables	Lecture
Lec_26	Chapter 7: Additional SPC Techniques for Variables	Lecture
Lec_27	Chapter 7: Additional SPC Techniques for Variables	Lecture
Lec_28	Chapter 9: Control Charts for Attributes	Lecture
Lec_29	Chapter 9: Control Charts for Attributes	Lecture
Lec_30	Chapter 9: Control Charts for Attributes	Lecture
Lec_31	Chapter 9: Control Charts for Attributes	Lecture
Lec_32	Chapter 9: Control Charts for Attributes	Lecture
Lec_33	Chapter 9: Control Charts for Attributes	Lecture
Lec_34	Chapter 9: Control Charts for Attributes	Lecture
Lec_35	Chapter 9: Control Charts for Attributes	Lecture
Lec_36	Chapter 9: Control Charts for Attributes	Lecture
Lec_37	Chapter 10: Acceptance Sampling.	Lecture
Lec_38	Chapter 10: Acceptance Sampling.	Lecture
Lec_39	Chapter 10: Acceptance Sampling.	Lecture
Lec_40	Chapter 10: Acceptance Sampling.	Lecture
Lec_41	Chapter 3: Six Sigma	Lecture
Lec_42	Chapter 3: Six Sigma	Lecture
Lec_43	Chapter 3: Six Sigma	Lecture
Lec_44	Chapter 3: Six Sigma	Lecture
Lec_45	Chapter 3: Six Sigma	Lecture

10. Grade distribution

Assessment	Grade	Date
- Midterm Exam	30%	
-Project Reports /Quizzes/ Seminar /Homeworks ….)	20%	
- Final Examination	50%	

Make-up exams will be offered for valid reasons. It may be different from regular exams in content and format.