### IE 461 – Product Quality Assurance

#### 1. COURSE NUMBER AND NAME

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#### 2. CREDITS AND CONTACT HOURS

3 Credits. 3 Contact Hours

#### 3. COURSE INSTRUCTOR

George Abdou

#### 4. TEXT BOOK


#### 4A. OTHER MATERIAL

#### 5A. CATALOG DESCRIPTION

Methods used to achieve higher product quality, to prevent defects, to locate chronic sources of trouble, to measure process capability, and to use inspection data to regulate manufacturing processes are emphasized. Preparation of statistical control charts and selection of suitable sampling plans

#### 5B. PREREQUISITES

IE 331

#### 5C. REQUIRED, ELECTIVE OR SELECTED ELECTIVE

Required

#### 6A. SPECIFIC OUTCOMES OF INSTRUCTION

The students will:

1. Learn to choose and use the appropriate control chart (a, e, k).
2. Learn to choose and use the appropriate sampling plan (a, e, k).
3. Be able to determine the implications and impact of specifications and tolerances (a, e, k).
4. Be able to solve basic reliability problems (a, e, k).

#### 6B. CRITERION 3 OUTCOMES ADDRESSED

The mapping of the four (4) outcomes of instruction of item 6A to the Criterion 3 outcomes (a-k) is as follows:

1. Satisfies Criterion 3 outcomes a, e and k.
2. Satisfies Criterion 3 outcomes a, e and k.
3. Satisfies Criterion 3 outcomes a, e and k.
4. Satisfies Criterion 3 outcomes a, e and k.

#### 7. TOPICS COVERED

1. Review of probability distributions
2. Control chart principles
3. Control charts for variables (X, R charts)
4. Control charts for attributes (p, c, u charts)
5. Specifications and tolerances
6. Fundamental of acceptance sampling
7. Acceptance sampling by attributes
8. Special attribute sampling procedures
9. Reliability
10. Graphic methods for QC
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<tr>
<td>11. TQM, ISO standards</td>
<td>12. Tabuchi’s Techniques</td>
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