Industrial Engineering Program

1. COURSE NUMBER AND NAME	**IE 461 – Product Quality Assurance**
2. CREDITS AND CONTACT HOURS	3 Credits. 3 Contact Hours
3. COURSE INSTRUCTOR	George Abdou
4. TEXT BOOK	Mitra, Amitava, Fundamentals of Quality Control and Improvement, 2nd Ed., Prentice Hall, 1998.
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

	11. TQM, ISO standards 12. Tabuchi’s Techniques