Industrial Engineering Program

1. COURSE NUMBER AND NAME	**IE 203 – Application of Computer Graphic in Industrial Engineering**
2. CREDITS AND CONTACT HOURS	2 Credits. 3 Contact Hours
3. COURSE INSTRUCTOR	Paul Ranky
4. TEXT BOOK	Ranky, Paul. IE 203 Interactive Mulimedia eLearning Pack
4A. OTHER MATERIAL	CDs with text, images, video clips active Excel templates, active code to execute, Virtual Factory Tours and Presentations on DVD videos.
5A. CATALOG DESCRIPTION	Areas of graphical communication germane to manufacturing and production are stressed. Provides mathematical and practical knowledge of graphical standards necessary to meet the requirements of today's industrial engineering practices. Introduction to the use of up-to-date software for computer-aided graphics, databases, spreadsheet, general programming, statistical analysis. Also, ProEngineer, Database, Lotus, Fortran/C/ Pascal, and SAS.
5B. PREREQUISITES	CS 101, FED 101
5C. REQUIRED, ELECTIVE OR SELECTED ELECTIVE	Required
6A. SPECIFIC OUTCOMES OF INSTRUCTION	The students will: 1 Use computer graphics and object oriented interactive multimedia development and application methods in the industrial and systems engineering context (a, b, e). 2 Be able to create new ideas and turn them into a working prototype (c, d). 3 Learn procedures, tools and software programs, as validation tools for the methods (k). 4 Create and use process, analytical requirements analysis, and process risk analysis models (b, c, d). 5 Learn the evaluation/validation process, as well as gain practical COTS skills as they apply the learned methods and tools to real-world IE challenges (e, f, g, k).
6B. CRITERION 3 OUTCOMES ADDRESSED	The mapping of the five (5) outcomes of instruction of item 6A to the Criterion 3 outcomes (a-k) is as follows: 1. Satisfies Criterion 3 outcomes a, b and e. 2. Satisfies Criterion 3 outcomes c and d.

	3. Satisfies Criterion 3 outcome k.
	4. Satisfies Criterion 3 outcomes b, c and d.
	5. Satisfies Criterion 3 outcomes e, f, g and k.
7. TOPICS COVERED	1. Introduction and overview of computer graphics in IE
	2. Terminology, scope, methods, integration and application aspects/challenges in real-world applications
	3. Internet standards
	4. Objects, webpage design
	5. Internet-based knowledge management
	6. Object oriented process modeling
	7. Requirements analysis modeling
	8. Risk analysis modeling
	9. TQM, DBMS, PLM, digital design and digital manufacturing/assembly/disassembly
	10. Application of various Microsoft, Adobe, Apple, IBM and other software packages
	11. Visual factory design concepts
	12. Communication, presentation and documentation methods, tools and skills