SOUTHERN ILLINOIS UNIVERSITY at CARBONDALE
IT445 Computer-Integrated Manufacturing

Course Description: Introduction to the use of computers in the manufacturing of products. Includes the study of Direct Numerical Control (DNC) and Computer Numerical Control (CNC) of machine tools as well as the interaction with process planning, inventory control, and quality control.

Textbook: *Computer-Integrated Manufacturing*, 3rd Ed., James A. Rehg and Henry W. Kraebber, Prentice Hall, Upper Saddle River, New Jersey, Columbus, Ohio, 2004.

Instructor: Ray Baron, (314) 941-9308, email (preferred): raybaron2003@yahoo.com
Course Objectives: Demonstrate an understanding of CAD/CAM/CIM and the current state of CIM implementation.

Student Evaluation:
Three exams will be given at the times indicated in the "Assignment Schedule". Exams will cover the reading assignment material, material presented outside the text material, and in-class problems. Exam questions will be matching, true/false, multiple choice, and fill in the blank.

Research Paper: Requirements are 4-8, double-spaced, typed pages (1000 words excluding title pages and works cited page). Refer to at least 5 recent (less than 2 years old) references. The paper must be submitted either via email, 3.5 disk or CD.
The following are possible topics for the paper:
* Material handling (applied to manufacturing ONLY)
* Manufacturing Systems
* Manufacturing Execution System (MES)
* Client/Server (applied to manufacturing ONLY)
* Supplier Management Systems
* Six Sigma/Quality Systems
* Automated Office
* e-Manufacturing

NOTE: Must be your own work! There will be a severe penalty for not using your own words in this project. Do not copy and paste from a source unless you are using a quote. If you copy and paste without referencing an Internet source you will receive an F for the paper. If it is from the Internet, it can be traced. **Reference all sources.**

Alternatives to Research Paper:
1. Prepare and present material from Chapters 6, 7, 8, or 9 to class on last weekend. Will be graded on ability to hold student interest and coverage of the topic. (Hint: use visual aids pertaining to subject such as, overheads, video, etc.) Presentation should last 60-90 minutes. Video cannot be longer than 30 minutes. Rough outline must be presented to instructor for approval by 2nd weekend.

2. Arrange for tour in manufacturing machining area. See instructor for approval. I will select the tour that best addresses our topic. There is room for two afternoon tours.
3. Prepare in-class demonstration of Robotics, PLCs, e-manufacturing or other manufacturing computerized equipment. See instructor for approval.

NOTE: It is the policy of this instructor that all assignments are turned in on the times indicated. Failure to do so without an acceptable excuse will result in grade reduction. Missed exams and excused late assignments must be completed and received by the instructor no later than 30 days after the last Sunday. Failure to meet this deadline will result in a final grade dependent on the amount of points accumulated.

Class Schedule:

Weekend 1:
Chapters 1,2,3,4,5
Introduction to CNC Programming

Weekend 2:
Exam 1 - on material from 1st weekend
Chapters 10,11,12,13

Weekend 3:
Exam 2 - on material from 2nd weekend
Chapters 6,7,8,9
Exam 3 (open book) - on material from last weekend
Research paper due Sunday (email or thumb drive)

Grading:

Exam 1	100 pts	270+ = A
Exam 2	100 pts	240-269 = B
Exam 3	50 pts	210-239 = C
Research P.	30 pts	180-209 = D
Participation	20 pts	<180 = F

Total	300 pts	