

MANUFACTURING SYSTEMS

ETES 5030/7030

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REQUIRED TEXTBOOKS Manufacturing and Automation Technology, Wright, R. Thomas,
(Goodheart-Wilcox Co., Inc. ©2004)
Manufacturing Laboratory Manual, Wicklein, R.C.,
(Access through WebCT).

DESCRIPTION OF COURSE

This course focuses principally on manufacturing practices using the enterprise approach. Laboratory activities center around the developmental and production phases of a manufactured product.

COURSE GOALS

The general goal is to provide manufacturing experience for students in the technology education instructional program. Emphasis will be placed on: the enterprise approach in teaching manufacturing within the technology education curriculum, the development of companies to manufacture a product, problem solving employed in the manufacturing of a product, and awareness of and literacy about the current state of manufacturing.

MY STYLE of TEACHING

Classes will be conducted using the following teaching style:

Lectures, general discussions, and demonstrations (this means that you will need to be prepared to discuss course content and interact in class activities at any given time - there will be no passive learning).

2. Student presentations (research shows us that the best way to learn something is to teach it; each graduate student will lead a class discussion and/or demonstration related to course content).

COURSE REQUIREMENTS

GROUP REQUIREMENTS AND ACTIVITIES

The following requirements and activities will be a major responsibility for each company that make up this class:

- Organizing a manufacturing company
- Planning production for the manufacturing company
- Financing the manufacturing company
- Developing production tooling for the manufacturing company
- Training a work force for the manufacturing company
- Producing 22 mass produced products within a 2 hour period of time
- Creating a company portfolio depicting all phases of development for the manufacturing company

Group requirements and activities will account for 25% of the overall course point value.

LAB MANUAL OBJECTIVE SETS

Several written assignments, to be done on an individual basis will be given to reinforce the major manufacturing presentations. The assignments are listed below and are presented in detail in the lab manual under the *Objectives and Assignments* section:

- Rationale for Manufacturing
- Product Engineering & Development and Marketing
- Organization and Finance
- Production Planning
- Manufacturing the Product

There will be other individual assignments (eg., product idea, etc.) that are required, but are considered in your peer evaluation.

Individual assignments will account for 10% of the total point value for the course.

MANUFACTURING FIELD TRIP

We will take a field trip to a local manufacturing facility. The date for the field trip to be determined by the instructor and may require that we depart the UGA campus prior to our normal class start time. Please arrange your schedule to accommodate this special event. Provide a written report (2-3 pages) of the selected manufacturing company along with an explanation of the type of production being done at the facility. Include appropriate photographs (if permissible) and plant floor plan to help depict the manufacturing processes and procedures. Each student may be asked to provide a short oral presentation describing your field trip.

If any student is not available at the time of the prearranged field trip, they may arrange and conduct a personal field trip to a manufacturing facility of their choice as long as it meets the instructor's criteria (check with instructor prior to conducting personal field trip).

Field trip assignment will count for 5% of the total point value for the course.

QUIZZES

Five (5) unannounced quizzes will be administered during the semester. Quizzes will be objective in nature and will be specific to the assigned reading scheduled for the date when the quiz is administered. This assignment is designed to encourage students to be fully vested in required reading for this course.

Each quiz will be worth 3 points and will have an overall value of 15% of your grade.

STUDENT LOG/CLASS PARTICIPATION

Each student will be responsible for creating a documented student log of all of their individualized work assignments within their designated company. The student logs will be attached to the company portfolio and will be used to evaluate individual contributions to the company efforts. Each student will be responsible for bringing and wearing approved safety glasses/goggles and following all safety regulations while working in the laboratory.

In addition, your participation in class will be vital for your success in this course! You are expected to be on-time and attend all class meetings (I will take role each class period) and participate in all activities and discussion. Absence or tardiness from any class is not acceptable, there are NO excused absences. This assignment is worth 5% of the total point value for the course.

MID-TERM EXAMINATION

A mid-term examination will be administered approximately half way during the academic term. This examination will address course content in its entirety (text reading, hand-outs, class discussions & demonstrations, etc.). The examination will be designed to determine your ability to comprehend course content and synthesize materials into a coherent perspective. The examination will be designed in an essay format.

The mid-term will account for 15% of the overall course point value.

FINAL EXAMINATION

The final examination will be comprehensive in nature seeking to address every aspect of the course (text reading, hand-outs, class discussions & demonstrations, production planning, manufacturing run, etc.). The examination will be designed to determine your ability to comprehend course content and synthesize materials into a coherent perspective. The examination will be designed in an essay format.

The final examination will account for 25% of the overall course point value.

GRADUATE STUDENT SUPPLEMENTAL

Each graduate student will be responsible for leading the class discussion during a specified class period. This discussion will include a complete development of the topic assigned for the specific date. Graduate students

are required to read, research, and design a well developed lesson plan which will include hand-outs, overheads (preferably electronic presentations - Power Point), as well as class lecture/discussion. Specific topical areas will be based on established course outline and will be available on a first-come basis. Evaluation will be based on the level of comprehensiveness, logical presentation, and innovation/interest generation.

This assignment is worth an additional 10% of the overall course point value.

EVALUATION

Group Requirements & Activities

Lab Manual Objective Sets

Field Trip

Quizzes

Mid-Term Examination

Final Examination

Student Log/Class Participation

TOTAL

Graduate Student Assignment 25%

10%
5%
15%
15%
25%
5%
100%
10%

GRADING SCALE (cutoffs based on percentage of total possible points)

- A 90% and higher
- B 80%
- C 70%
- D 60%
- F Below 60%

This scale will be used objectively in assigning grades. There is no grading curve in this course. For example, a student with a final percentage of 89.9% will receive a "B" regardless of how "close" it may be to an "A." You are responsible to give yourself whatever "safety zone" you feel is necessary to attain your targeted grade.

LATE ASSIGNMENTS:

I expect assignments to be completed on time. My standard policy regarding assignments is 10% penalty for late assignments turned in within 1 week of due date and 50% penalty for assignments turned in thereafter until the end of the course (defined as the last regular class session). I use this system even in the event of "excusables," such as minor sicknesses or other unforeseen conflicts. However, any exceptions to this policy are made at my discretion.

DISHONESTY:

Cheating on class assignments, examinations, or other serious forms of academic activities will result in a grade of "F" (and a required report to

University Officials). Persons "borrowing" someone else's work on an assignment will receive a zero on that assignment if it is the first offense. A second offense will be considered a serious form of academic dishonesty. (Borrowee is equally subject to penalties.)

WITHDRAWAL POLICY:

Withdrawal policy and procedures are described on page 39 of the undergraduate catalog.