

# **AEC 851 - SPRING 2007**

## **AGRIBUSINESS FIRM MANAGEMENT**

### **Instructors:**

Stephen B. Harsh  
307 Agriculture Hall  
Tel: 353-4518  
email: harsh@msu.edu  
Office Hours: (M ) 9:00 -  
10:00 or by appointment

J. Roy Black  
306 Agriculture Hall  
Tel: 353-9649  
email: blackj@msu.edu  
Office Hours: By appointment

Christopher A. Wolf  
317B Agriculture Hall  
Tel: 353-3974  
email: wolfch@msu.edu  
Office Hours: By appointment

**Class Schedule:** 12:40 - 2:00 (Monday & Wednesday; occasionally on Friday), Room 49  
Agricultural Hall  
Mid-term examination: Monday, February 26  
Final examination: Wednesday, May 2, 12:45 - 2:45 p.m.

### **Course Objectives:**

1. To provide the student an understanding of operations management concepts and their application to the management of agribusinesses.
2. To acquaint the student with the use and interpretation of selected tools, techniques, and methods for addressing operations management problems commonly encountered by agribusinesses.
3. To foster a classroom and office environment conducive to learning and mutual exchange of ideas.

### **Required Text and Readings:**

The concepts, tools and techniques explored in this course are diverse. Furthermore, because operations management textbooks tend to focus on the operations of a manufacturing firm. Thus, no available textbook fully meets the course needs. Reading for each section of the courses will be assigned and copies of these reading will be placed in a "checkout box" in room 213 , Agriculture Hall.

### **Software:**

Several different software packages will be used in the course. Some of this software will be provided for your personal use and others will be available for use in the Agricultural Economics Computer Facility ( room 403, Agricultural Hall).

### **Grading:**

The course grade will be based on class assignments (50 percent), a midterm exam (20 percent), and a final exam (30 percent).

# SUBJECT OUTLINE

- 1. Introduction: (1 period)**
  - A. Objectives of course
  - B. Introduction to operations management
  
- 2. Budgeting and activity analysis (1.5 periods)**
  - A. Partial budgeting
  - B. Enterprise budgets
  - C. Total business budgeting
  
- 3. Linear programming (10 Periods)**
  - A. Basic linear programming concepts
  - B. Assumptions
  - C. Graphic and algebraic illustration
  - D. Post optimal and sensitivity analysis
  - E. Applications in operations management
    - Profit maximization
    - Cost minimization
    - Transportation and allocation analyses
    - Transshipment model
    - Project management
    - Integer and mixed-integer programming
    - Multi-criteria analysis (optional)
    - Polyperiod dynamic analysis (optional)
    - Duality (optional)
  
- 4. Management information systems (1 period)**
  - A. Types of information systems
  - B. Role of information systems in operations management
  - C. GIS systems (optional)
  
- 5. Risk Analysis and Management (8 periods)**
  - A. Sources of business risk, risk assessment, and risk control tactics and strategies
  - B. Choice criteria
  - C. Basic tools for risk analysis
    - Stochastic budgets and stochastic simulation
    - Risk-adjusted budgeting
    - Decision trees and payoff matrices
    - Scenario analysis
  
- 6. Dynamic programming & Markov processes introduction (8 periods)**
  - A. Basic Concepts
    - State and control variables
    - The Markovian property of a decision process
  - B. Modeling management problems
    - Asset replacement problem
    - Firm growth and investment models
    - Production response
  
- 7. Synthesis (0.5 period)**