
**Dynamic Strategic Planning
Casablanca, Morocco
March 22-27, 2004**

Course Overview

General Information

- **Instructor: Richard Roth**
email: rroth@mit.edu
- **Course Website**
<http://msl1.mit.edu/mib>, then click on Morocco 2004
- **Text: Applied Systems Dynamics by R. deNeufville,**
Chapters 13 – 20
(chapters are available on the website)
- **Based on MIT course 3.57: Dynamic Strategic Planning & research at the MIT Materials Systems Laboratory**
(more information available at <http://msl1.mit.edu/msl>)

Class Structure

- **Each Day Will Have Three Parts**
 - Lecture
 - Problem Session
 - Working Session
- **Lectures will review & introduce new topics**
- **Problem sessions will reinforce topics through selected problems**
- **Working sessions will focus on development of the case assignment**

Course Outline/Schedule

| Date | Lectures | Problem Session | Working Session |
|--------------------|------------------------------------------------------|-----------------------------------------|------------------------------------------------------------------|
| Mon. March 22 | Course Introduction Technical Cost Modeling | Cost Model Development | Student Cost Models |
| Tues. March 23 | Decision Trees | Decision Tree Problems | Detailed Discussion of Case Assignment Student Cost Models |
| Wed. March 24 | Probability Assessment/ Bayes Theorem | Decision Tree/Bayes Theorem Problems | Market Analysis for Case Assignment |
| Thurs. March 25 | Value of Information Perfect & Sample Information | Information Problems | Decision Analysis for Period One |
| Friday March 26 | Value & Utility Functions | Decision Variables & Decision Tree | Decision Analysis for Period Two |
| Sat. March 27 | Presentations of Business Cases | | |

Course Requirements & Grading

- **Case Assignment**
 - Group Presentation
 - Individual Final Report
Students will turn in an INDIVIDUAL final report describing the groups business case analysis and their recommendations.
- **Class Participation**
 - During General Class Sessions
 - Group Participation

Case: Business Plan Development

- **For a new business venture of your choosing**
 - Determine optimal business size
 - Price of product
- **Practical limitations for this course:**
 - Business size/price fixed for the first period (5 years)
 - After first period opportunity to expand, stay same, close the business
 - Business must have significant fixed costs (otherwise the decision about size is not very relevant)
 - Demand for the product must show some price sensitivity (otherwise always ask for a high price)

Business Case Tools

- **Cost Modeling**
 - Essential to understand costs of the product as a function of the business size (plant planned capacity) and actual production volume (market size)
- **Decision Trees (tree_98.xls)**
 - Tool to investigate the choices of plant sizes & product prices
 - Tree_98.xls is provided as a tool for this analysis (see website)

Cost Modeling

- **Cost model must have the following features:**
 - Production capacity (representing plant size)
 - Actual production volume (amount actually produced in response to the market demand)
 - Unit cost of the product
- **Model development**
 - Based on information about the product manufacturing
 - Use of costskel.xls as a template if necessary (see website)

Decision Tree

- **Tree_98.xls provided for case analysis**
 - Considers 3 possible plant sizes and 2 possible prices
 - Considers decisions over two five year periods
- **Development of alternate tree structures possible using Tree_plan, although students are strongly encouraged to use Tree_98 due to time constraints of the course**