Dynamic Strategic Planning
Casablanca, Morocco
March 24-29, 2008

Course Overview

General Information

- **Instructor: Richard Roth**
  email: rroth@mit.edu
- **Course Website**
  http://msl1.mit.edu/mib, then click on Morocco 2008
- **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**

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
Monday March 24	Course Introduction Process Based Cost Modeling	Business Case Requirements	Group Business Case Selection
Tuesday March 25	Process Based Cost Modeling (continued)	Review of Business Case Requirements	Develop Cost Models for Business Case
Wednesday March 26	Dynamic Strategic Planning/ Decision Trees	Decision Tree Problems	Market Analysis for Business Case
Thursday March 27	Probability Assessment/ Bayes Theorem	Bayes Theorem & Multi-period Decision Problems	Plant Sizes & Prices for Business Case
Friday March 28	Value of Information Perfect & Sample Information	Information Problems	Finalize Business Case Analysis
Saturday March 29	Presentations of Business Cases		

Course Requirements & Grading

- **Business Case Group Presentation (30%)**
  - Presentation in class on Saturday describing the recommended business strategy
- **Individual Final Report (30%)**
  - Students will turn in an INDIVIDUAL final report describing the groups business case analysis and their recommendations
- **Homework (20%)**
  - Each working session will have a short assignment addressing the business case topic for that day. Each student must turn in their own homework assignment, although the answers can be developed as a group
- **Class Participation (20%)**
  - 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 (tree04_v3.xls)**
  - Tool to investigate the choices of plant sizes & product prices
  - Tree04_v3.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 or simple_cost.xls as a template if necessary (see website)

Decision Tree

- **Tree04_v3.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 Tree04_v3 due to time constraints of the course**