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**Dynamic Strategic Planning  
Casablanca, Morocco  
March 19-24, 2007**

**Course Overview**

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**General Information**

- **Instructor: Richard Roth**  
email: rroth@mit.edu
- **Course Website**  
<http://msl1.mit.edu/mib>, then click on Morocco 2007
- **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/mib>)

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**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**

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**Course Outline/Schedule**

Date	Lectures	Problem Session	Working Session
Monday March 19	Course Introduction Technical Cost Modeling	Cost Model Development	Student Cost Models
Tuesday March 20	Cost Modeling (continued) Dynamic Strategic Planning/ Decision Trees	Decision Tree Problems	Discussion of Business Case Assignment Student Cost Models
Wednesday March 21	Probability Assessment/ Bayes Theorem	Bayes Theorem & Multi-period Decision Problems	Market Analysis for Case Assignment
Thursday March 22	Value of Information Perfect & Sample Information	Information Problems	Decision Analysis for Period One
Friday March 23	Value & Utility Functions	Work on Business Case	Decision Analysis for Period Two
Saturday March 24	Presentations of Business Cases		

## **Course Requirements & Grading**

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- **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**

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- **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**

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- **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**

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- **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**

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- **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**