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**Dynamic Strategic Planning II  
Tokyo, Japan  
June 2001**

**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 Tokyo 2001
- 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**

<b>Date</b>	<b>Lectures</b>	<b>Problem Session</b>	<b>Working Session</b>
Sat. June 9	Course Introduction Technical Cost Modeling	Cost Model Development	Student Cost Models
Mon. June 11	Review of Decision Trees	Decision Tree Problems	Cost Model Development (cont'd)
Tues. June 12	Review of Probability Assessment/Bayes Theorem	Decision Tree & Bayes Theorem	Detailed Discussion of Case Assignment
Wed. June 13	Value of Information	Information Problems	Market Analysis for Case Assignment
Thurs. June 14	Value & Utility Functions	EXAM	Case Decision Variables & Tree
Fri. June 15	Utility Assessment Methods	Review of Exam	Decision Analysis for Period One
Sat. June 16	Multi-attribute Utility Analysis	Decision Analysis for Period Two	Presentations of Business Cases

## **Course Requirements & Grading**

- **Case Assignment**
  - Group Presentation
  - Individual Final Report
- **Class Participation**
- **Exam**

## **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**

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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 (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**

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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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- **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**