

# **Systems Thinking**

**Duration: 5 Half Days** 

# **Course Description:**

The course uses systems thinking to study the patterns of behavior we observe in real-world businesses, markets, economies, and supply chain interactions and how these patterns relate to the structure of the underlying systems. We look at why so many business strategies generate disappointing results or outright failure. Students learn to conceptualize a business organization as structures and policies that create dynamics and govern performance. The course introduces system dynamics tools for modeling and analyzing business policy and strategy. Case studies include successful applications of system dynamics in growth strategy, technology management, operations, project management, and implementation of improvement programs. Students will learn to recognize and deal with situations where policy interventions are likely to be delayed, diluted, or defeated by unanticipated reactions and side effects. You will have a chance to use state-of-the-art software for computer simulation and gaming. Assignments give hands-on experience in developing and testing computer simulation models in diverse settings.

#### **Course Objectives:**

- To introduce the basic principles of Systems Thinking
- To introduce the basic characteristics of systems and the importance of systemic thinking in organizational life.
- To use systems thinking as a platform for enhancing innovation and creativity
- To practice a "shift of mind" framework to understand complexity by viewing systems as a whole and using the view to find the effective leverage as insights for breakthrough solutions.
- To develop the skill to create your own causal loop diagram to analyze the problematic behavior of systems
- To develop the skill to create simple Stock and Flow diagram to analyze the impact of changes to business policies.
- To help take your first step toward becoming a systems thinker

## **Target Audience:**

This class will appeal to several audiences. First, this course is useful for anyone who wants to develop a broader toolkit for examining the chronic challenges of managing and leading in today's organizations. It will be especially useful to those interested in careers in management, in part for the modeling skills covered, but also for developing rigorous and structured thinking skills. The course has a heavy dose of "reality," so it should also appeal to students who wish to blend theory with the harsh realism of practical challenges in management.

### **Course Outlines:**

Day 1: Introduction and Overview:

- Why are we here? What is System Dynamics and why do I care?
- Overview of System Dynamics modeling process

Day 2: System Dynamics Tools Part 1:

- Reference modes, mapping and the grammar of causal links
- > The Nuts and Bolts of Causal Loops

Day 3: System Dynamics Tools Part 2:

- > Fundamental modes of dynamic behavior
- Interactions of the fundamental modes
- Other modes of behavior

#### Day 4

- System Dynamics Tools Part 3:
- > Types of Archetypes using Causal Loop Diagram
- > How to intervene policies to achieve better outcome

Day 5 System Dynamics Part 4:

- > Introduction to Stock and Flow Diagram
- Using Stock and Flow to simulate policies and their impact on business