

Dynamic Systems Analysis and Design

Course Overview

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Construction Engineering and Management



Dynamic Systems Analysis and Design

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□ **Purpose of the course**

- To introduce a new management tool and system analysis method to graduate students in construction engineering and management

□ **Prerequisites:**

- General engineering knowledge
- Basic understanding of construction organizations

□ **Class audiences**

- Graduate Students in Construction Engineering and Management

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□ Course outline

#	Topic
1	Introduction to System Dynamics
2	Causal Loop Diagrams
3	Stocks and Flows
4	Dynamic Systems Computer Simulation
5	The Modeling Process
6	Structure and Behavior of Dynamic Systems
7	Dynamics of Stocks and Flows
8	Closing the Loop: Dynamics of Simple Structures
9	The Dynamics of Growth
10	Delays
11	More Tools for Modeling Dynamic Systems
12	Model Testing

Dynamic Systems Analysis and Design

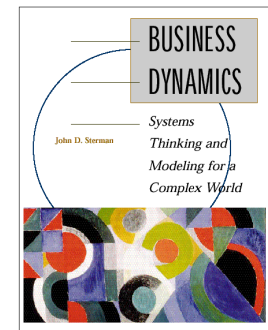
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□ **Grade Distribution:**

- ▣ Home Assignments: 15%
- ▣ Lab/ in Class Exercises: 10%
- ▣ Term Project: 15%
- ▣ Final Exam: 60%

□ **Texts and References**

- ▣ Stermann J.D. (2000) “Business Dynamics: System Thinking and Modeling for a Complex World” McGraw-Hill Higher Education: NY.





Thank you!