

**SYSC 511 Systems Theory**  
**Winter 2011**  
**6:40-8:30 pm Monday, Wednesday**

**Instructor:** Dr. Thaddeus Shannon

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**Description:**

This class presents a broad introduction to systems science. It begins with an overview of the systems paradigm and its historical context. The theories of multivariate relations, dynamic systems, learning and optimization will be surveyed in the context of modeling, control and classification problems. Students will gain perspective on issues such as discrete versus continuous systems, types of system representations and linear versus non-linear systems.

**Texts:**

George J. Klir, *Facets of Systems Science*, 2<sup>nd</sup> Ed., Kluwer/Plenum, 2001.

Herbert A. Simon, *The Sciences of the Artificial*, 3<sup>rd</sup> Ed., MIT Press, 1996.

**Topics:**

- Object-Relation Model
- The Systems Movement
- Systems Hierarchy
- Complexity
- Information
- Cybernetics
- Fuzzy Systems

**Evaluation:**

Homework	50%
Final Exam	50%