سرفصل مباحثی ویژه در سیستمهای دینامیکی:

منابع:

1) Dynamical systems, stability, symbolic dynamic and chaos
Clark Robinson
2) Introduction to Dynamical Systems
Michael Brin, Garrett Stuck

First and second weeks: **Examples and Basic Concepts**
1. The Notion of a Dynamical System
2. Circle Rotations
3. Expanding Endomorphisms of the Circle

Third and fourth and sixth weeks: **Examples and Basic Concepts**
1. Shifts and Subshifts
2. Quadratic Maps
3. The Gauss Transformation
4. Hyperbolic Toral Automorphisms

Seventh and eighth weeks:

1. The Horseshoe
2. The Solenoid

Ninth and tenth weeks: **Two dimentional Topological Dynamics**
1. Limit Sets and Recurrence
2. Topological Transitivity
3. Topological Mixing

Eleventh and twelfth weeks: **Two Topological Dynamics**
1. Expansiveness
2. Topological Entropy

Thirteenth and fourteenth weeks: **Symbolic Dynamics**
1. Subshifts and Codes
2. Subshifts of Finite Type

Sixteenth and seventeen and eighteenth weeks: **Ergodic Theory**
1. Measure-Theory Preliminaries
2. Recurrence
3. Ergodicity and Mixing
5. Ergodic Theorems
6. Invariant Measures for Continuous Maps
7. Unique Ergodicity and Weyl's Theorem
8. Weak Mixing