MATH 560 - Advanced Topics in Probability and/or Statistics.

The official bulletin description is "topics are selected by instructor", but here is the course description from the syllabus for this semester:

Overview and Learning Outcomes

Probability and stochastic processes are topics at the forefront of modern scientific research. Especially exciting is the dynamic aspect of probability, where we study the evolution of a system through time as it obeys probabilistic rules. This course will introduce the student to the theory and use of Markov Chains, Chapman-Kolmogorov Equations, Birth-Death Processes, Queue Models, and their application to problems in various fields (eg, biology, physics, finance, operations). We will also explore the use of computer simulation. We may address other topics as time allows.
At the end of this course, the student should be able to:

1. demonstrate knowledge of definitions and theorems for Markov Chains, Chapman-Kolmogorov Equations, Birth-Death Processes, and Queue Model;

2. solve classic problems in stochastic processes from biology, physics, finance, operations , or other fields;

3. demonstrate basic proficiency at numerical simulation of such systems using either a programming language or a computer algebra system; and

4. be able to effectively communicate solutions through clearly written work