

**Statistics 6540 (Spring 2018)**  
**Applied Stochastic Processes**

<b>Instructor</b>	Prof. Shili Lin, 440A Cockins Hall, 2-7404
<b>Lectures</b>	MWF 10:20-11:15 AM, Cockins Hall 232. No classes on Jan 15, Mar 12, 14, & 16.
<b>Office Hours</b>	MW 9:00-10:00 AM and by prior appointment
<b>Grader</b>	Yiyang Lin; email: lin.1459@buckeyemail.osu.edu; Tutor room & hours: CH 134; TF 11:30 AM-1:40 PM, TR 11:30 AM-12:30 PM
<b>Website</b>	<a href="http://carmen.osu.edu">http://carmen.osu.edu</a>
<b>Required Textbook</b>	Taylor and Karlin (1998) <i>An Introduction to Stochastic Modeling</i> , 3rd Edition. Academic Press.
<b>Prerequisites</b>	Statistics 6301 or equivalent
<b>Course Description</b>	An introduction to some of the commonly encountered stochastic processes, including Markov chains and Poisson processes. Basic theory as well as applications will be discussed.
<b>Learning Objectives</b>	Develop technical skills for working with discrete-time Markov chains; understand the theory and applications of Poisson processes; gain familiarity with branching processes, birth and death processes, and Gaussian processes
<b>Homework</b>	There are (approximately) weekly homework assignments. You may discuss with other students, but <b>DO NOT</b> simply copy any part of someone else's work or solutions from any other sources. Violations will be treated as academic misconducts. Homework will be collected in class. <b>No late homework will be accepted.</b>
<b>Exam 1</b>	Friday, February 23 (in class). One 8.5" X 11" sheet of notes may be used for the exam. <b>No make-up exam will be given.</b>
<b>Exam 2</b>	Friday March 30 (in class). One 8.5" X 11" sheet of notes may be used for the exam. <b>No make-up exam will be given.</b>
<b>Final Exam</b>	Thursday Apr 26, 10:00-11:45 AM. Two 8.5" X 11" sheets of notes may be used for the exam. <b>No make-up exam will be given.</b>
<b>Grading</b>	The final numerical grade will be determined as follows. Attendance may be taken into account if necessary. Homework      15% Exams 1 & 2    45% Final Exam     40%
<b>Special Accommodations</b>	If you need any accommodations based on the impact of a documented disability, contact the instructor privately to discuss your specific needs. You should also contact the Office of Disability Services to coordinate special accommodations.
<b>Academic Misconduct</b>	Academic misconduct will not be tolerated and will be dealt with procedurally in accordance with university policy.

## Tentative Schedule

Topics	Chapters	No. of Lectures
Introduction and probability review	1, 2	3
Discrete-time Markov chains	3	15
Limiting behavior	4	6
Poisson processes	5	10
Continuous-time Markov chains	6	6