STATISTICS 7540 - SPRING 2017

Instructor: Professor Doug Critchlow

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Office Hours: Wednesdays and Fridays 3:30 – 4:30 p.m.

Textbook: A First Course in Stochastic Processes (2nd Ed.) by S. Karlin & H. M.
                        Taylor

Topics Covered in the Course:

> Brief Overview of General Stochastic Processes
> Discrete State - Discrete Time Markov Chains (including classification of states,
>   recurrence, and limiting behavior of the Markov chain as time $\rightarrow \infty$)
> Discrete State - Continuous Time Markov Chains (including the Poisson process
>   and birth and death processes)
> Brief Introduction to Continuous State - Discrete Time Markov Chains (which are
>   used in the computer-intensive Markov Chain Monte Carlo method)
> Brownian Motion
> Martingales
> Additional Topics selected from Gaussian Processes, Diffusion Processes,
>   Renewal Processes, etc.

Additional References:

> Feller, W., An Introduction to Probability Theory and its Applications, Volume 1.
> Kemeny, J.G. and Snell, J.L., Finite Markov Chains.
> Meyn, S.P. & Tweedie, R.L., Markov Chains and Stochastic Stability.
> Robert, C.P. & Casella, G., Monte Carlo Statistical Methods.
> Ross, S.M., Introduction to Probability Models.

Prerequisite: Statistics 7201

Classroom Policies: Use of personal computers, cell phones, etc. is prohibited
during lecture. Please do not read the newspaper or other extraneous materials
during lecture. Homework will be due at the start of class; please do not work on
the homework during lecture.

Attendance Policy: In accordance with University Rules, a student who is absent
from three or more (not necessarily consecutive) classes, without contacting the
instructor with a valid excuse, may be reported for possible disenrollment. To prevent
disenrollment, the instructor should be contacted (e-mail: critchlow.1@osu.edu) within
24 hours of the third (and any subsequent) absence.