Statistics 886- Fall 2020
ONLINE course

Stochastic Processes & Applications.

Instructor: Shlomo Levental.
Email: levental@ msu.edu

Time and Place: M, W, F, 12:40pm- 1:30pm in Zoom. The lectures will be recorded and posted on D2L (***http://d2l.msu.edu***)

https://msu.zoom.us/j/94901640687

Meeting ID: 949 0164 0687
Passcode: 406971

Office Hours: M, W, 10:30- 11:20 am
Use the same meeting ID and passcode as for the lectures.

Objective: The purpose of the course is to teach basic theory and applications of stochastic processes. This subject is very useful in all sorts of areas like: Engineering, Computer Science, Economics, Finance and insurance, Biology, etc. The goal is that by the end of the course the student will master some basic techniques and examples.
Remark: Some of the material is required for certain exams of the society of actuaries (SOA).

Description of the course: The course will cover the following topics:
1.   Brief review of Probability Theory
2.   discrete-time Markov chains.
3.   Poisson Processes.
4.   Continuous-time Markov chains.
5.   Renewal Theory and its applications.
6.   Basic Queuing Theory
7.   Brownian motion.

Prerequisite: STT 441/STT861 or similar Probability-based calculus course.

Text book: *Intoduction to Probability Models* by Sheldon M. Ross, 10th edition. (This is not the latest edition of this book.)
Remark: A more advanced material can be found in *Stochastic Processes* by the same author.

Homework: There will be homework assignments throughout the semester. The students are expected to submit the assignments by the due date. This will be done by using D2L which is an educational software supported by MSU. (*http://d2l.msu.edu*)

Exams: There will be 2 midterms during the semester. The dates and the material for the exams will be announced in advance. The midterms will be online.

Grading: It will be based on the homework and the exams. There is no fixed scale for the course grade. It will be decided on a curve.

Remark: Some changes in the above are possible.

Important Dates (**Look for MSU Calendar for more dates.**)

Classes begins 9/2/2020
Holiday University closed 9/7/2020
Open adds end (8:00 pm) 9/9/2020
Last date to drop with refund (8:00 pm) 9/28/2020
Last date to drop with no grade reported (8:00 pm) 10/21/2020
Holiday University closed   11/26/2020-11/27/2020
Lectures end 12/3/2020
Final exams 12/9/2020-12/18/2020

Learning Continuity Statement: Let me know if you are unable to attend class for an extended period so we can come up with arrangements regarding:

Communication norms surrounding prolonged absences.

Assignments and homework surrounding prolonged absences.

Assessment accommodations surrounding prolonged absences.

Technical remark: This course will be delivered *online* through the D2L system and you will need your MSU NetID to login to the course from the **D2L homepage (*http://d2l.msu.edu*).**

In **D2L**, you will access recorded lessons and submit your homework. You will also submit your exams there. You also can also use the D2L email system.