ESE 503: Stochastic Systems

Fall 2022

Instructor: Dr. Petar M. Djurić
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Office hours:
TU 1:00 PM – 2:00 PM
W 2:30 PM - 5:30 PM
or by appointment

Class Meetings: W 6:05 PM - 7:25 PM
Frey Hall, 309

Grading: One midterm, 40% each
Final 60%


Lectures: Will be provided on Blackboard

Topics:
- Combined experiments. Repeated trials. Bernoulli’s theorem.
- Functions of random variables. Moments.
- Monte Carlo methods.
- Random processes -- general concepts. Stationary processes.
- Systems with stochastic inputs.
- Discrete-time processes.

Goals: The goal of the course is to teach students the basics of probability theory and stochastic processes. More specifically, it is to introduce the students to the concept of probability spaces, random variables, random vectors and random processes. The goal is then to apply these concepts to system theory. Exposing the students to applications of probability theory is another important goal.

Objectives: Upon completion of this course, students will be able to solve a range of problems that involve random events, variables and vectors as well as systems with stochastic inputs. The students will also be able to solve problems with practical context.
**Student Accessibility Support Center**
If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, 128 ECC Building, (631) 632-6748, or via e-mail at: sasc@stonybrook.edu. They will determine with you what accommodations are necessary and appropriate. All information and documentation are confidential.

**Academic Integrity**
Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/index.html

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Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students’ ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.