

ESE 122: Discrete Mathematics for Engineers
Summer 2018

Catalog Description:

Introduction to topics in computational mathematics, such as number systems, Boolean algebra, mathematical induction, combinatorics and probability, recursion and graph theory. Algorithm aspects of the topics discussed will be emphasized.

Course Designation: Required Course for Computer Engineering

Text Books: “Discrete Mathematics with Applications,” Susanna S. Epp. Fourth Edition, 2011.
Brooks/Cole Cengage Learning. ISBN: 978-0-19-495-39132-6

Prerequisites: Corequisite: ESE 123

Coordinator: Sangjin Hong

Goals: Introduce basic concepts in discrete mathematics and associated computational tools

Course Learning Outcomes:

- ability to apply knowledge of mathematics, science and engineering
- an ability to identify, formulate, and solve engineering problems
- an ability to use techniques, skills, and modern engineering tools necessary for engineering practice

Topics Covered:

Week 1	Set Theory Boolean Algebra
Week 2	Mathematical Induction Recursion
Week 3	Counting Functions and Relations
Week 4	Combinatorics Probability
Week 5	Modular Arithmetic Finite Automata

Week 6.	Graph Theory Trees
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Class/laboratory Schedule: 6 lecture hours per week

Blackboard

You can access class information on-line at: <http://blackboard.stonybrook.edu>

For help see: <http://it.stonybrook.edu/services/blackboard>

For problems logging in, go to the helpdesk in the Main Library SINC Site or the Union SINC Site; you can also call: 631-632-9602 or e-mail: helpme@stonybrook.edu

ADA Statement (Americans with Disabilities Act)

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, 128 ECC Building (631) 632-6748. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the following website: www.ehs.sunysb.edu and search Fire Safety and Evacuation and Disabilities.

Academic Honesty and 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. Any suspected instance of academic dishonesty will be reported to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at www.stonybrook.edu/uaa/academicjudiciary.

Student Outcomes	% contribution*
<input type="checkbox"/> (a) an ability to apply knowledge of mathematics, science and engineering	40
<input type="checkbox"/> (b1) an ability to design and conduct experiments	
<input type="checkbox"/> (b2) an ability to analyze and interpret data	
<input type="checkbox"/> (c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	
<input type="checkbox"/> (d) an ability to function on multi-disciplinary teams	10
<input type="checkbox"/> (e) an ability to identify, formulate, and solve engineering problems	30
<input type="checkbox"/> (f) an understanding of professional and ethical responsibility	
<input type="checkbox"/> (g) an ability to communicate effectively	
<input type="checkbox"/> (h) the broad education necessary to understand the impact of engineering	10

solutions in a global, economic, environmental, and societal context

- (i) a recognition of the need for, and an ability to engage in life-long learning
- (j) a knowledge of contemporary issues
- (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
- Any other outcomes and assessments?

Document Prepared by: Sangjin Hong

Date: April 4, 2018