ECEN 227 - Discrete System Modeling

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North Carolina A & T State University

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Course Outline

Topics Covered	Week	Tentative Testing Date
Set Theory	1	
Functions	2	Exam #1 Sept 24th
Propositional Logic	3-4	
Proofs	5	
Number Theory	6	
Algorithms	7-8	Exam #2 Oct 29th
Counting Techniques	9	
Induction and Recursion	10-11	
Relations	12	Exam #3 Nov 19th
Graphs	13	
Trees + all concepts	14	**Final Exam December**

Introduction

- **Course Description:** An introduction to applied discrete mathematics as it relates to computer engineering.
- **TA:** TBA
- **Credits:** 3
- **Prerequisite:** ECEN 101 (Prob Solving With MATLAB)
- **Materials:** An online book has been set up for the course at www.zybooks.com. Go to this website and create account. Once you have an account, use to the following book code for this course: NCATECEN227NabilFall2020. You will be instructed on how to purchase the book ($58).
- **Course Materials:** Please visit Blackboard
- **Class Schedule:** This class meets R 2:00-4:30 pm virtually.
- **Office Hours:** R 11:00-2:00 pm virtually. Please send me an email.

References to be used

📄 Sandy Irani
Discrete Mathematics
Discrete Math zyBook.

📄 Kenneth H. Rosen
Discrete Mathematics and Its Applications, 7th Edition
McGraw-Hill, New York, NY, 2012.

📄 Susanna S. Epp
Discrete Mathematics with Applications, 4th Edition
Brooks/Cole Publishing Company, Pacific Grove, California, 2011.

📄 Ding-Zhu Du, Ker-I Ko
Problem Solving in Automata, Languages, and Complexity, 4th Edition
John Wiley & Sons, Inc, New York, 2001

Intended Learning Outcomes (1/2)

- Utilize mathematical reasoning to read, comprehend, and construct mathematical arguments.
- Solve basic counting problems with combinatorial analysis.
- Utilize basic discrete structures appropriately to model, analyze, and solve problems.
- Specify algorithm design using pseudocode.
- Explain how propostional logic is related to computation

Intended Learning Outcomes (2/2)

- Verify algorithm operation.
- Analyze time complexity of algorithms.
- Apply discrete mathematics to practical scenarios
- Utilize graph theory to model systems
- Demonstrate proofs for mathematical theorems

Grade Evaluation

Grading Scale
- A = 90 to 100
- A- = 86 to 89
- B+ = 83 to 85
- B = 80 to 82
- B- = 76 to 79
- C+ = 72 to 75
- C = 69 to 71
- C- = 65 to 68

- D+ = 62 to 64
- D = 59 to 61
- D- = 56 to 58
- F = 55 or below

Category	Weight
Quizzes (Approx. weekly)	15%
Homework (Quiz Preparation)	10%
Exams	50%
Final Exam	25%

Academic Integrity

- Academic integrity violations, when submitting course-related work, will result in the loss of credit for the specific assignment, quiz, individual project or exam, or a grade of F for the course. Repeated academic integrity violations may lead to dismissal from the University.

- To review the North Carolina A & T State Universitys Academic Dishonesty Policy, please see the following URL: Here (pp. 42-43)

Policies (1/3)

Attendance Policy: Attendance in NOT calculated into the final grade, however regular attendance is essential to understanding the course material.

Grade Adjustment Policies:

- Each quiz and homework grade will be curved such that the three highest grades received is the total possible points for the assignment.
- The 2 lowest quiz grades will be dropped.
- The 2 lowest homework grades will be dropped.
- Your grade on the final exam will replace the lowest of your 3 semester exam grades ONLY if it will improve your final grade

Policies (2/3)

Missed and Late Assignment Policy:

- Make-up exams will only be offered to students with excused absences for the day of the original exam.

- A legitimate written excuse is to be provided on the first day of the students return to class.

- More than 10 minutes late on an exam day will constitute an absence, in which case the student will not be allowed to take the exam, and a written excuse will be needed in order for a make-up exam to be scheduled.

Policies (3/3)

Computer Usage During Quizzes and Exams:

- The ONLY type of computing device that students will be allowed to use during a quiz or exam will be a stand-alone calculator, ONLY if permitted by the instructor for that quiz or exam.

- Use of general purpose computing devices (i.e., laptops, desktops, tablets, cell phones, etc.) is forbidden during a quiz or exam in all cases.

- One page single side cheat sheet is allowed during exams.

Questions