

CMPE 16

Applied Discrete Mathematics

Summer 2019 (June 24 – August 16)

Description: Introduction to applications of discrete mathematical systems. Topics include sets, functions, relations, graphs, predicate calculus, mathematical proof methods (induction, contraposition, contradiction), counting methods (permutations, combinations), and recurrences. Examples are drawn from computer science and computer engineering. Knowledge of computer programming is useful before taking this course. Students who do not have prior programming experience are strongly recommended to take Computer Science 5C, 5J, or 5P before taking this course. Prerequisite(s): Mathematics 19A or 11B or Applied Mathematics and Statistics 11B or 15B or Economics 11B.

Time and Place: Time and Place: MWF 10:00am-11:35am Soc Sci 2 - 179

Class Webpage: <https://classes.soe.ucsc.edu/cmpe016/Summer19/>

Instructor: Patrick Tantalo <http://users.soe.ucsc.edu/~ptantalo/>

Office: E2-239A

Office Hours: MW 4:30-7:00pm, F 4:30-5:30pm, or by appointment

Email: ptantalo@soe.ucsc.edu

Teaching Assistant:

Samira Zare (szare@ucsc.edu)

LSS Small Group Tutor:

Miguel Orozco (morozco7@ucsc.edu)

Required Texts:

[Reading Schedule](#)

[DMOI] *Discrete Mathematics: an Open Introduction*

by Oscar Levin (<http://discretetext.oscarlevin.com/home.php>)

[BOP] *Book of Proof*

by Richard Hammack (<http://www.people.vcu.edu/~rhammack/BookOfProof/>)

Recommended Texts:

Discrete Mathematics and its Applications

by Kenneth H. Rosen, 8th edition, McGraw-Hill 2018 (ISBN 978-1259676512)

Applied Discrete Structures

by Alan Doerr and Kenneth Levasseur (<https://faculty.uml.edu/klevasseur/ads2/>)

Coursework:

- 10% Homework: Written exercises from both [DMOI] and [BOP] texts.
- 50% Quizzes: Last 20 minutes of class on the following Fridays: 7/5, 7/12, 7/19, 7/26, 8/2, 8/9.
- 40% Final Exam: Friday August 16, 10:00am-12:00pm.

Grading scale:

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|----|---------------|
| A+ | 97.0% - 100% |
| A | 93.0% - 96.9% |
| A- | 90.0% - 92.9% |
| B+ | 87.0% - 89.9% |
| B | 83.0% - 86.9% |

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|----|---------------|
| B- | 80.0% - 82.9% |
| C+ | 76.0% - 79.9% |
| C | 70.0% - 75.9% |
| C- | 67.0% - 69.9% |
| D+ | 64.0% - 66.9% |
| D | 61.0% - 63.9% |
| D- | 58.0% - 60.9% |
| F | 0% - 57.9% |

All scores (Homework, Quizzes, Final Exam and Overall) will be rounded to the nearest 10th of a percent. They will not be rounded further. No scores in this class are curved.

Accommodations for Students with Disabilities

UC Santa Cruz is committed to creating an academic environment that supports its diverse student body. If you are a student with a disability who requires accommodations to achieve equal access in this course, please submit your Accommodation Authorization Letter from the Disability Resource Center (DRC) to me privately during my office hours (or by appointment), preferably within the first two weeks of the quarter. At that meeting, we will discuss how to best ensure your full participation in the course. I encourage all students who may benefit from DRC services, or who wish to just learn more about those services, to contact DRC by phone at 831-459-2089, or by email at drc@ucsc.edu. See also <https://drc.ucsc.edu/>.

Academic Honesty:

The Baskin School of Engineering has a zero tolerance policy for any incident of academic dishonesty. If cheating occurs, consequences may range from getting zero on a particular assignment to failing the course. In addition every case of academic dishonesty is referred to the students' college Provost, who sets in motion an official disciplinary process. Cheating in any part of the course may lead to failing the course, suspension or dismissal from the Baskin School of Engineering, or from UCSC.

What is cheating? In short, it is presenting someone else's work as your own. Examples would include copying another student's written homework assignment, quiz, or exam, or allowing your own work to be copied. You may discuss homework problems with fellow students, but your collaboration must be at the level of *ideas* only. Legitimate collaboration ends when you "lend", "borrow", or "trade" *written solutions* to problems, or *in any way share in the act of writing your solutions*. If you do collaborate (legitimately) or receive help from anyone, you must credit them by placing their name(s) at the top of your paper. Go to https://www.ue.ucsc.edu/academic_misconduct to see the University's policy on Academic Misconduct.

Some Important Summer Session Deadlines:

Last day to drop: Monday July 8 (week 3)

Last day to withdraw: Friday July 26 (week 5)

For all dates and deadlines, see the summer academic calendar at:

<https://summer.ucsc.edu/studentlife/index.html>

For questions about dropping, requesting a W grade, or withdrawing from Summer Session, email:

summer@ucsc.edu