CMPE 16  
**Applied Discrete Mathematics**  
Summer 2018 (June 25 – August 17)

**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 programing 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:** MWF 10:00-11:45am  
Physical Sciences 114

**Class Webpage:** [https://classes.soe.ucsc.edu/cmpe016/Summer18/](https://classes.soe.ucsc.edu/cmpe016/Summer18/)

**Instructor:** Patrick Tantalo  
[http://users.soe.ucsc.edu/~ptantalo/](http://users.soe.ucsc.edu/~ptantalo/)

**Office:** E2  255

**Office Hours:** TTh 2:00pm-5:00pm, or by appointment

**Email:** ptantalo@soe.ucsc.edu

**Teaching Assistant:**  
Samira Zare ([szare@ucsc.edu](mailto:szare@ucsc.edu))

**Required Text:**  
*Discrete Mathematics and its Applications* by Kenneth H. Rosen, 7th edition, McGraw-Hill 2012 (ISBN 9780073383095). The Bay Tree Bookstore has a custom edition that includes only the sections we will be using in this course (ISBN 9781308944463). We will cover sections 1.1-1.7, 2.1-2.5, 4.1-4.3, 5.1-5.3, 6.1-6.6, 7.1-7.4, 8.1-8.3, 8.5, 8.6, 12.1-12.3. It is possible to use an earlier edition, when doing so however, it is entirely the students’ responsibility to compensate for changes in section, page and problem numbers. Follow this link to see a mapping of the 7th edition section numbers to those of the 6th edition: [https://classes.soe.ucsc.edu/cmpe016/Summer18/RosenSections.pdf](https://classes.soe.ucsc.edu/cmpe016/Summer18/RosenSections.pdf).

**Optional Online Texts:**  


*Discrete Structures* by Vladlen Koltun ([http://web.stanford.edu/class/cs103x/cs103x-notes.pdf](http://web.stanford.edu/class/cs103x/cs103x-notes.pdf))


**Coursework:**
- 10% **Homework:** Written exercises from Rosen 7th edition.
- 50% **Quizzes:** Last 20 minutes of class on the following Fridays: 7/6, 7/13, 7/20, 7/27, 8/3, 8/10.
- 40% **Final Exam:** Friday August 17, 10:00am-12:00pm.

**Grading scale:**

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<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A+</td>
<td>97.0% - 100%</td>
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<tr>
<td>A</td>
<td>93.0% - 96.9%</td>
</tr>
<tr>
<td>A-</td>
<td>90.0% - 92.9%</td>
</tr>
<tr>
<td>B+</td>
<td>87.0% - 89.9%</td>
</tr>
<tr>
<td>B</td>
<td>83.0% - 86.9%</td>
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Letter grade boundaries *may be* lowered at my discretion in order to eliminate some borderline cases.

**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 this time, I would also like us to discuss ways we can ensure your full participation in the course. I encourage all students who may benefit from learning more about DRC services to contact DRC by phone at 831-459-2089, or by email at 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](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 9 (week 3)
- Last day to withdraw: Friday July 27 (week 5)