California State University, Sacramento
College of Engineering and Computer Science

Computer Science 28: Discrete Mathematics

Spring 2017 Syllabus

Instructor

Devin Cook, M.S.

Contact Information

I use the same e-mail address to answer questions and to receive your coursework. So, please use a descriptive subject in your e-mail. I get quite a bit of e-mail, and the subject helps a lot.

E-Mail	dcook@csus.edu
Office	Riverside Hall 5009

Website

All the information in this syllabus – as well as other helpful information presented during the course – can be found online. Please note the lack of "www" and the tilde symbol before "cookd".

Website	`http://athena.csus.edu/~cookd/28`

Course Description

Catalog Description

Introduction to the essential discrete structures used in Computer Science, with emphasis on their applications. Topics include: counting methods, elementary formal logic and set theory, recursive programming, digital logic and combinational circuits, real number representation, regular expressions, finite automata.

Prerequisites

- MATH 29
- CSC 20 (may be taken concurrently)

Textbook

None

Major Topics

- Counting methods: basic principles, permutations and combinations, the pigeonhole principle
- Sets and relations: sets, sequences and strings, relations, functions
- Common numerical sets, representation of real numbers (bias, mantissa and negative numbers)
- Logic and proofs: propositions, conditional propositions and logical equivalence, quantifiers, proofs, mathematical induction
- Recursive programs: problem solving with well-structured recursive functions, recursive procedures, implementation and efficiency of recursive algorithms
- Digital logic: Boolean algebra, logic gates and combinatorial circuits, circuit design methodology, reduction to nor/nand gates, circuit minimization, Karnaugh maps including don't care
- Languages: generation vs. recognition, regular expressions, finite-state machines

Lectures

- Please ask questions or give comments. I enjoy back-and-forth interactions with students. There are no dumb questions!
- Attendance is vital to your success in the course. If you need to miss a class, you are responsible for checking with a classmate about the material we covered.
- During lectures **no** electronic devices, of any type, are allowed. This includes laptops, phones, and other texting devices. **No** exceptions.
- Pop quizzes, if given, **cannot** be made up.

Assignments

- My job is not to give you the correct solution, but to help you figure it out by yourself. There are no "dumb" questions, so don't be afraid to ask. But, don't be upset if I don't given an answer!
- I don't mind students discussing, ahead of time, how to find a solution. In fact, it's a great idea! Just don't share solutions – just ideas!
- Late assignments are penalized. I will take off 10%, per day, starting immediately after the assignment is due.
- Do **not** cheat or help others cheat. This means you cannot show your solution to another student or show how to do it. For example: don't copy off another student's screen or let them copy off yours.
- In **any** case of cheating, both the student, that copied the solution, and the one who allowed it, will receive a zero. Depending on the severity, I might have to notify the College.
- You only get to submit each assignment once – so make sure you did it correct!

Exams

- There are two midterms during the semester. Each is spaced approximately with 4 weeks in between.
- The two hour Final is comprehensive.
- If, for some reason, you will not be able to attend the exam, you must contact me *before* the exam date.
- Any material covered in the lectures or the book can be included in the exams.

Grading

Title	Percent	
Quizzes / Attendance	10%	40%
Assignments	30%	
Midterm Exams	30%	60%
Final Exam	30%	
	100%	

Note:

Depending on how much material is covered during the semester, the percentages may vary.

Resources

Students with Disabilities

If you have a disability and require accommodations, you need to provide disability documentation to SSWD (Services to Students with Disabilities). Please discuss your accommodation needs with me after class or in lab early in the semester.

Website: **www.csus.edu/sswd**

Writing Center

For free, one-on-one help with reading or writing in any class, visit the University Reading and Writing Center (URWC) in Calaveras Hall 128.

Website: **www.csus.edu/writingcenter**