

Course information and policies

Time and location:	MWF 10:00–10:50 a.m. in 136 Nutt MECC
URL:	http://www.cs.trincoll.edu/~miyazaki/cpsc203/
Instructor:	Takunari Miyazaki
Office:	133 Nutt MECC
Phone:	(860) 297-4041
E-mail:	takunari.miyazaki@trincoll.edu
Office hours:	MWF 11:00 a.m.–noon or by appointment
Teaching assistants:	B D S Aritra '25 Mia F. Creane '25

Course description. An introduction to the principles of discrete mathematics required in the study of computer science. Mathematical reasoning and problem solving are emphasized. Students also learn how to write mathematically-rigorous proofs. Topics covered include: propositional logic and proof techniques; sets, functions and sequences; algorithms and complexity; integer and modular arithmetic; induction and recursion; counting and probability; recurrences; relations; graphs and trees.

Prerequisite. C– or better or concurrent enrollment in CPSC 115L.

Time required outside class. This is a one-credit course. You are expected to spend on average approximately nine hours per week outside class studying and completing assigned work.

Required materials. There is one required textbook:

- K. H. Rosen, *Discrete mathematics and its applications*, 8th ed., McGraw-Hill, New York, 2019.

Exams. There will be three exams:

- Exam 1 on Monday, October 7, in class.
- Exam 2 on Monday, November 11, in class.
- Final exam on Wednesday, December 18, at noon in 136 Nutt MECC.

No early or late exam will be offered. These exams will be closed-book exams.

Quizzes. There will be short quizzes given in class, roughly speaking, once every two weeks, unless there is an exam. The dates of these quizzes will be announced shortly. No early or late quiz will be offered; however, your lowest quiz grade will be disregarded at the end of the term. These quizzes will be closed-book quizzes.

Homework assignments. There will be weekly homework assignments involving problem solving. These assignments are to be completed *individually*. Your solutions must be neatly handwritten or typed and submitted in paper. Some problems will be challenging, so be sure to start early. Every assignment is due at the *beginning* of the class period on the date specified. No late nor e-mail submission will be accepted; however, your lowest homework grade will be disregarded at the end of the term.

Attendance and late policies. You are required to attend every class, arriving on time and not leaving before the end of the class period, and you will be responsible for knowing about all announcements made in class. You should also check your e-mail at least once a day for course-related announcements. As stated above, all exams/quizzes must be taken on the dates specified, and all assignments must be submitted by the due dates. Only in an extenuating circumstance (e.g., illness or injury, a family emergency), you may request for an excused absence, an extension for an assignment or an early/late exam/quiz, but such a request must be made *in advance* in writing with justification to the instructor.

Grading. Your overall course grade will be evaluated according to the following weights for the total of 100%.

Two in-class exams:	2 × 15%
Final exam:	30%
Homework assignments:	25%
Quizzes:	10%
Class participation:	5%

Plagiarism and academic dishonesty. You are encouraged to consult with one another when you work on homework assignments, but, in the end, everyone must do one's own work to hand in. In particular, discussion on homework assignments should be limited to brainstorming and verbally going through strategies, but it must not involve one student sharing written solutions with another student. In the end, *everyone must write up solutions independently*. If you have discussed with classmates or used any outside source (i.e., anything other than the course materials and teaching-assistant assistance), you must clearly indicate so on your solutions and provide all complete references. Turning in another person's work under your name is plagiarism and qualifies as academic dishonesty. Academic dishonesty is a serious intellectual violation, and the consequences can be severe. For more details, read the [Student Handbook 2024–2025](#), pp. 13–22.

Special needs. Trinity College is committed to creating an inclusive and accessible learning environment consistent with the [Americans with Disabilities Act](#). Students with disabilities who may need some accommodation in order to fully participate in this course are urged to contact the [Student Accessibility Resource Center \(SARC\)](#) at (860) 297-4025 or sarc@trincoll.edu, as soon as possible, to explore what arrangements need to be made to assure access. If you already have SARC's approval for academic accommodations, please notify the instructor during the first two weeks of the term. For those students with accommodations approved after the term begins, a minimum of ten days' notice is required. Please meet with the instructor privately to discuss implementation.



CPSC 203 home page

Computer Science Department
Trinity College
300 Summit Street
Hartford, Connecticut 06106-3100

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Course schedule

The topics and reading assignments are tentative and subject to change.

Week	Date	Topics	Reading	Homework
1	Sept. 4, 6	Propositional logic	§§1.1–1.4	Homework 1
2	Sept. 9, 11, 13	Proof techniques	§§1.6–1.8	
3	Sept. 16, 18, 20	Sets, functions and sequences	§§2.1–2.4	
4	Sept. 23, 25, 27	Algorithms and complexity	§§3.1–3.3	
5	Sept. 30, Oct. 2, 4	Integer and modular arithmetic	§§4.1–4.3	
6	Oct. 7 (Mon.) Oct. 9, 11	Exam 1, in class Cryptography	§§4.4–4.6	
7	Oct. 14, 15 Oct. 16, 18	<i>Trinity Days</i> Induction	§§5.1, 5.2	
8	Oct. 21, 23, 25	Recursion and program correctness	§§5.3–5.5	
9	Oct. 28, 30, Nov. 1	Counting	§§6.1–6.3	
10	Nov. 4, 6, 8	Discrete probability	§§7.1, 7.2	
11	Nov. 11 (Mon.) Nov. 13, 15	Exam 2, in class Recurrences	§§8.1–8.3	
12	Nov. 18, 20, 22	Relations and their representations	§§9.1, 9.3	
13	Nov. 25 Nov. 27–29	Equivalence relations <i>Thanksgiving vacation</i>	§9.5	
14	Dec. 2, 4, 6	Graphs	§§10.1–10.5	
15	Dec. 9	Trees	§§11.1, 11.2	
	Dec. 18 (Wed.)	Final exam		



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