

**DeAnza-Math 22-27Z: Discrete Mathematics [CRN 26115]**

**TTh 01:30 PM–03:45 PM, Location: ZOOM**

**Classes meets September 20 - December 10, 2021 .**

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**Instructor:** Reza Shariatmadari, **Email:** shariatmadarireza@fhda.edu **Textbook:**

Discrete Mathematics, Brief Edition by Susanna S. Epp.

**Calculators:** In general we don't use calculator in this class that often, but when needed, online calculator/graphing calculator (like DESMOS or GeoGebra) will suffice. If you are allowed to use a calculator during an exam or quiz, it must be a non-graphing, simple calculator. You will be notified in advance if calculator is allowed during exams.

**Course Description and Prerequisites:** Elements of discrete mathematics with applications to computer science. Topics include methods of proof, mathematical induction, logic, sets, relations, graphs, combinatorics, and Boolean algebra.

**Prerequisite:** MATH 43 with a grade of C or better, or equivalent and CIS 22A or CIS 35A with a grade of C or better, or equivalent. Advisory: EWRT 211 and READ 211 (or LART 211), or ESL 272 and 273.

**Important Footnote information:** Discrete Mathematics is an upper division undergraduate math course in most universities and you should expect the same quality and rigor in my class. Examples and problems in this class will cover a wide range of topics such as Number Theory, Abstract Algebra, Real Analysis, Graph Theory, Topology, Probability and Machine Learning. This is an online class with some scheduled meetings as noted in the class listing. Portion of this class must be completed independently on the student's own time. Students must have access to a computer (with camera), the internet, an individual email address, and access to De Anza's Canvas site.

**By the end of this quarter, I want you to be able:**

- 1- to match key terms to the appropriate concepts and definitions.
- 2- to define key terms in your own words.
- 3- to recognize and use concepts and procedures correctly in new situations appropriate to your discipline.
- 4- to break larger issues/problems into their component parts in order to facilitate problem solving and deeper understanding.
- 5- to combine concepts and procedures from this class in new ways to solve problems or create new ways of seeing the course content.

6- to compare and contrast data in such a way that allows you to solve problems and accomplish your goals.

### **Course Policy:**

- 1- No late work will be accepted under any circumstances nor credit given for late homework and assignments.
- 2- No make-up exams will be given under any circumstances.
- 3- Do not text during class time.
- 4- Your cell phone should either be off or on silent mode, but not on vibration during class time.
- 5- I will not tolerate prejudiced and/or hateful comments such as racism, homophobia, sexism, misogyny or other forms of hate-speech, or contributions that could be interpreted as such. Personal attacks, trolling, abuse and provocative, insulting, aggressive or threatening behavior will not be tolerated.

### **Few tips on how to succeed in my class:**

Your success in my class is extremely important to me and I will do everything in my power to get you there. Here are few tips:

- 1- Be an active learner, don't memorize, learn the concepts.
- 2- When you try to solve a problem, make sure you understand what the problem is asking. Read the question multiple times and then come up with a strategy to solve the problem.
- 3- Don't be afraid of making mistakes. Form a strategy, if it doesn't work, try a different strategy.
- 4- No matter what, don't give up.
- 5- Ask questions.
- 6- Think, think, think. Never start solving a problem without thinking.

**Midterms, Exams and Quiz:** There will be three quizzes this quarter. These quizzes will be given either during regularly scheduled class meetings, as a take home exam, group exam, or any combination of the three. You will be notified in advance about the format of these exams. These quizzes are cumulative with more emphasis on the most recent materials. Any change in quiz dates and/or location will be announced in advance.

### **Tentative Midterms Schedule:**

Quiz 1: October 12, 2021 , Covers Chapters 1, 2, 3, 4

Quiz 2: November 02, 2021 , Cover Chapters 5, 6

Quiz 3: November 23, 2021 , Cover Chapters 7, 8, 9

**Final Exam:** Final Exam is scheduled for Tuesday December 07, 2021 from 1:45 PM to 3:45 PM and will cover Chapters 4, 5, 6, 7, 8, 10

**Homework:** There are five homework assignments during this quarter. But to succeed in this class I STRONGLY suggest that in addition to your homework, you solve as many recommended problems as possible. These recommended problems will provide practice, help clarify ideas introduced in class or in the text, and constitute a **partial** guide as to what to expect on Quizzes and Exams. You are encouraged to work together to study and do your homework.

**Attendance and class participation:** I expect that you attend all my lectures. You are expected to come to class prepared for the days discussion.

Should you miss a lecture for any reason, you are responsible for all the materials covered and assignments given. I suggest that you contact your group members to find out about the material that you have missed. I will not repeat any lectures under any circumstance, neither in class nor during my office hours.

**Academic Integrity:** Students are reminded that their behavior at all times reflects upon the college community. The minimum penalty for cheating, plagiarism, etc. is a grade of zero on the assignment. For additional information on the college's policies, read the Ethics and the Academic Integrity Policy at <http://www.deanza.edu/studenthandbook/academic-integrity.html>.

**Disability Services:** Students with disabilities should contact Disability Support Programs Services, Building: AT209. Contact: Marilyn Booye, Phone: 408.864.8407. I am happy to meet with you to discuss necessary academic accommodations once I receive appropriate documentation from Disability Support Programs Services.

**In-Class Recordings:** You are not allowed to take a video recording, audio recording, or streaming audio/video of private, non-public conversations and/or meetings, inclusive of the classroom setting, without the knowledge and consent of all recorded parties, except in cases of approved disability accommodations. Dissemination or sharing of any classroom recording without the permission of the instructor would be considered misuse and, therefore, prohibited.

**Important Dates:** For important dates, see De Anza Academic Calendar ASAP.

**Getting Help:** Tutoring is also available at "Math, Science and Technology Resources Center (S43). Please take advantage of this service at no cost to you.

**Grades:** Course grades will be determined by homework, quiz, and final exams. I reserve the right to make changes to the syllabus. I will not discuss your grades via email for security and privacy reasons but you must consult with me about your standing in class over zoom throughout the quarter. I strongly suggest that you do not leave anything for the last minute.

**General guidelines are as follows:**

- Homework: 10%
- Quiz 1: 20%
- Quiz 2: 20%
- Quiz 3: 20%
- Final Exam: 30%

**Your course letter grade will be assigned as follows:**

- A 94% to 100%
- A- 90% to < 94%
- B+ 87% to < 90%
- B 84% to < 87%
- B- 80% to < 84%
- C+ 77% to < 80%
- C 74% to < 77%
- C- 70% to < 74%
- D+ 67% to < 70%
- D 64% to < 67%
- D- 60% to < 64%
- F 00% to < 60%

**Few more additional course policies as the result of pandemic:** This class is a "synchronous" class which means your participation during official class schedule is expected. From time to time I will assign an "asynchronous" class day. For that day, you will be assigned a specific task to perform, and upload your work and results to Canvas. I will talk about the detail of the "asynchronous" day on the first day of class.

Class sessions and lecture are NOT recorded. One of my objective for this class is for you to develop self confidence in your abilities to learn and do mathematics, by reading, thinking and asking questions, rather than memorizing bunch of facts or by watching videos. These days there are plenty of videos on any subject available online and I just don't want to add to the clutter.

If you miss any class, synchronous or asynchronous, you are responsible for catching up and finding what you have missed. Start by getting the class notes either by contacting your group members or your classmates (but not me). Remember that I will not repeat any lecture, give private lecture during office hours (or any other time) to anyone.

Since your exam will take place over zoom, I must have a clear view of you, your both hands and your working area at all times. So take time and prepare your environment for exam days. You can always log into zoom from 2 devices and use one of those devices as a camera. To submit your exams, or any document to Camino, you must make sure your document is saved as a pdf. Any other types of files are not accepted. Also, during exams, you must remain on zoom while submitting your work. If you log out of zoom and then submit your work you will lose substantial amount of point.

I highly suggest that you do not show up late on exam day. If you are late to any exam (after I release the exam on Camino) you will lose substantial amount of points.

**Office Hours and Location:**

Time: Tuesday from 12:00 PM to 1:00 PM

Location: ZOOM

**Student Learning Outcome(s):**

\*Critique a mathematical statement for its truth value, defend choice by formulating a mathematical proof or constructing a counterexample.

\*Analyze and apply patterns of discrete mathematical structures to demonstrate mathematical thinking.