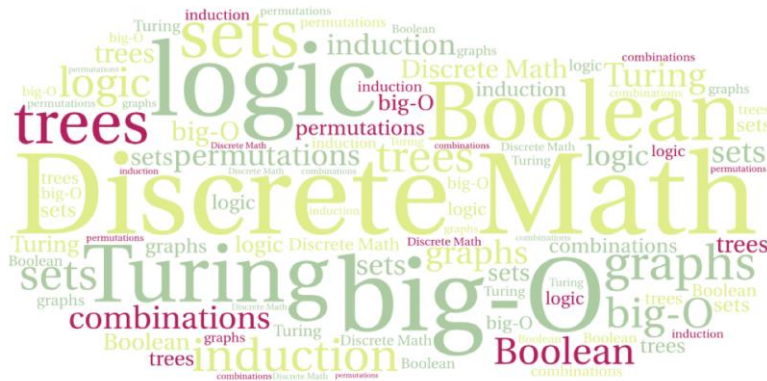


CALIFORNIA POLYTECHNIC STATE UNIVERSITY  
SAN LUIS OBISPO, CALIFORNIA  
COMPUTER SCIENCE DEPARTMENT



**CSC 248**  
**Discrete Structures I**

**Instructor:** Dr. Ignatios Vakalis  
**Office:** 14-217 (**not** in use for face-to-face meetings during Fall 2021)  
**Tel:** 756-6285  
**e-mail:** ivakalis@calpoly.edu

**CANVAS:**

We will be using CANVAS.

**Do become familiar *asap***, with CANVAS so you can know how to:

- Receive recorded notes/lectures
- Receive assigned homework problems (*You will do lots*)
- Submit homework problems
- Submit exams

Please see an intro video:

<https://www.youtube.com/watch?v=x3j8V-uLkNw>

Also CALPOLYs CTLC has a number of “held info/documents”.

**Do explore now**

*The syllabus is stored on CANVAS under the “HOME PAGE”*

## **Lectures:**

The course (this section) will be delivered:

- **Synchronously with ZOOM lectures:**

CSC -248 M, W 10:10 – 12:00noon PST

**Zoom address for lectures:** <https://calpoly.zoom.us/j/85742390157>

**Must attend the Zoom lectures with the camera on**

I will also “do my best” to post “**recorded lectures**” with notes

## **Office hours will be conducted on ZOOM:**

**Please put the following on your calendar...** and prepare (precise) questions...

**CSC 248 :**

Mon. 4:10-5:00pm <https://calpoly.zoom.us/j/86366972365>

Tues. 9-10am PST

<https://calpoly.zoom.us/j/87865571898>

**Prerequisites:** CSC/[CPE 203](#) with a grade of C- or better

## **Major topics covered in this course:**

- Basic Logic: Propositional and Predicate logic
- Basic Structures: Sets, Functions, Sequences and Sums
- Proof Techniques
- Fundamentals of Algorithms: Growth of Functions, Complexity
- Introduction to Recursion and Counting
- Graphs and Trees

## Learning Outcomes:

Upon successful completion of this course, the student should be able to:

- Apply formal methods of symbolic propositional and predicate logic
- Use formal logic proofs and logical reasoning to solve problems
- Explain with examples the basic terminology of functions, relations, and sets
- Perform the operations associated with sets, functions, and relations
- Demonstrate basic counting principles
- Discuss which type of proof is best for a given problem
- Outline the basic structure of and give examples various proof techniques
- Analyze a problem to create relevant recurrence equations
- Illustrate by example the basic terminology of graph theory
- Model problems in computer science using graphs and trees

## Textbook-Required:

*Discrete Mathematics and Its Applications*, 7<sup>th</sup> Edition; Kenneth Rosen, McGraw Hill

### Download –get BOOK:

[https://www.academia.edu/27806732/Discrete Mathematics and Its Applications 7th edition repost](https://www.academia.edu/27806732/Discrete_Mathematics_and_Its_Applications_7th_edition_repost)

<https://www.amazon.com/Discrete-Mathematics-Its-Applications-Seventh/dp/0073383090>

<https://www.chegg.com/textbooks/discrete-mathematics-and-its-applications-7th-edition-9780073383095-0073383090>

**Homework:** To learn Discrete Mathematics you **MUST** do a lot of homework.

Remember: “Learn by doing”

- Homework problems will be assigned at **each class** period and will be **due and must be submitted on CANVAS on WEDs by 4:00pm PST of almost every week.**

- **Your responsibility is/will be** to keep track and a good calendar of the due dates. (*Plan NOT to keep emailing me when each hmwk set is due*).  
**Must submit hmwk on time.**
- **No late** homework **will be accepted.**
- You will be submitting **ONE .pdf file for all pages for each homework.** I suspect you will handwrite your homework, take a picture, and with an app (must download), you MUST create **ONE .pdf file of all the pages,** to submit. So, please explore, get, practice how to create ONE .pdf file from photos of multiple of handwritten pages. **Do practice NOW, before homework is due** (*see info below*)

### **Some info on creating .pdf file:**

Students can use an app on their phone to convert photos of their work to a PDF document and then submit that PDF to Canvas via the Canvas Student app.

Some free apps that can convert photos to a PDF include [Office Lens](#), [Adobe Scan](#), and [Tiny Scanner](#)

**I recommend to** See the following videos on taking Picts, submitting the assignments:

[https://www.youtube.com/watch?v=lpjFqpVlnPM&feature=emb\\_logo](https://www.youtube.com/watch?v=lpjFqpVlnPM&feature=emb_logo) (Android)  
[https://www.youtube.com/watch?v=tkm4qswHEFc&feature=emb\\_logo](https://www.youtube.com/watch?v=tkm4qswHEFc&feature=emb_logo) (iOS)

- All homework will be collected, and some will be graded.
- You must sufficient time to prepare and **explain** the solutions

**Midterm exam:** **One** 2-hour exam during the class time  
**Monday Nov 1, 10am -12noon**  
**MUST take the exam that day/time, NO exceptions.**

**Final exam:** **One** 3-hour comprehensive exam during the designated date during finals week  
**Final exam: Friday Dec 10, 10:00am -1:00pm**

**Make a note on your calendar**  
**MUST take the exam that day/time, NO exceptions**

### **Grading**

Your grade for the course will be calculated as follows:

Homework	100 points
One midterm	100 points
Final Exam	150 points

### **No extra credit will be given**

The letter grade for the course will be assigned as follows:

<i>Percentages</i>	<i>Grade</i>
≥ 90%	A- or higher
≥ 80%	B- or higher
≥ 70%	C- or higher
≥ 60%	D- or higher
< 60%	F

Note: D- is a passing grade.

### **Cheating Policy:**

Any instances of cheating or plagiarism will be referred to the Campus Student Relations and Judicial Affairs Office (see Cal Poly rules and policies on this matter at the CSRJA web site, <http://www.calpoly.edu/~saffairs/csrja/index.html>).

**Students involved in such cases will be expelled from the course with a grade F.**

## **\*\* Important \*\***

### **\* COVID-19 Testing Compliance and Campus Safety**

Cal Poly is committed to protecting the health and safety of the campus community. By participating in this course, you agree to abide by ongoing testing and safety protocols as outlined in the [COVID-19 Presidential Order](#):

- Participate in COVID-19 testing as required by the University
- Complete daily health screenings
- Wear a face covering while on University property
- Maintain physical distance
- Adhere to health and safety signage

**Testing compliance.** Check the COVID-19 Info tab on your portal to determine your testing compliance status. If you are required to participate in ongoing testing, be reminded that it is your responsibility to do so. More details are available on the [Testing Compliance](#) webpage.

**Failure to comply with testing requirements will result in restrictions from campus services, spaces, and applications**