IMPERIAL VALLEY COLLEGE

Basic Course Information

Semester:	**Spring 2025**	Instructor Name:	**Jeff Burt**
Course Title & #:	**Math 240: Discrete Structures**	Email:	**Jeff.burt@imperial.edu**
CRN #:	**21179**	Webpage (optional):	**NA**
Classroom:	**2721**	Office #:	**2765**
Class Dates:	**2/10-6/6/25**	Office Hours:	**M/T/W/Th – 12:45 to 1:45**
Class Days:	**M/W**	Office Phone #:	**(760)355-6489**
Class Times:	8:00-9:25	Emergency Contact:	**email**
Units:	3	Class Format/Modality:	in person

Course Description

This course is an introduction to the theory of discrete mathematics and introduces elementary concepts in logic, set theory, graph theory, number theory and combinatorics. This forms a basis for upper division courses in mathematics and computer science, and is intended for the transfer student planning to major in these disciplines. The topics covered in this course include methods of proof, sets and relations, functions, number theory, induction, recursion, counting principles and probability trees, permutations, combinations, introduction to computer programming, and graph theory. (C-ID: MATH 160) (CSU/UC)

Course Prerequisite(s) and/or Corequisite(s)

MATH 192 with a grade of "C" or better.

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:
1. Use a truth table to test the validity of an argument.
2. Construct proofs of mathematical statements using standard techniques, including induction.
3. Apply graph theory to real world situations.

Course Objectives

Upon satisfactory completion of the course, students will be able to:
1. Write proofs using symbolic logic and Boolean Algebra.
2. Use recursion to analyze algorithms and programs.
3. Use sets to solve problems in combinatorics and probability theory.
4. Apply matrices to analyze graphs and trees.
5. Use finite state machines to model computer operations.

Textbooks & Other Resources or Links

Epp, Susanna. 2020. Discrete Mathematics with Applications. 5th Brooks/Cole. ISBN: 978-0495391326.

Course Requirements and Instructional Methods

Homework

Homework will be assigned at each class meeting. The pdf must be in the correct format and turned in on time to count for credit.

Quizzes

A quiz may be given at any time during any class period. It may not be announced. The number of quizzes or group work in the semester will be instructor's discretion. The purpose is to provide a feedback on the learning outcomes. The lowest 2 scores will be dropped.

Tests

There will be four tests. The purpose of these tests is to check your understanding of the concepts covered in the course. Most of the questions on these tests will require showing a significant amount of work. A correct answer with insufficient work will receive partial credit or no credit.

Final Exam

At the end of the semester, a COMPREHENSIVE/CUMULATIVE Final Exam will be given. If you miss the final, it will be recorded as a zero.

Out of Class Assignments: The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-class time per week over the span of a semester. WASC has adopted a similar requirement

Course Grading Based on Course Objectives

There will be 4 in class exams, each worth 15% of your grade. The final is comprehensive and is worth 25% of your grade. There are no make-ups for the exams or final. Plan to be here for the exam dates in the schedule, but also note that those dates can change, so make sure you are paying attention and staying up to date. Any missed exam will result in the grade of a '0'.

Grading: You need at least a total of 70% for a 'C' grade. It is broken down as follows

Quizzes	8%
HW	7%
Exams	60%
Final	25%
Total	100%

The grade categories are as follows: A 100%-90%, B 89.9%-80%, C 79.9%-70%, D 69.9%-60%, F 59.9%-0%

Attendance, class participation and a subjective instructor's interpretation of work may be used in assigning a final grade to borderline cases.

Academic Honesty (Artificial Intelligence -AI)

IVC values critical thinking and communication skills and considers academic integrity essential to learning. Using AI tools as a replacement for your own thinking, writing, or quantitative reasoning goes against both our mission and academic honesty policy and will be considered academic dishonesty, or plagiarism unless you have been instructed to do so by your instructor. In case of any uncertainty regarding the ethical use of AI tools, students are encouraged to reach out to their instructors for clarification.

Updated 6/2023

Course Policies

The goal of this course is for you to gain the necessary skills and knowledge to do well, and improve your mathematical abilities, so you are able to succeed in future courses. My responsibility is to help you in any way I can to accomplish these goals, however it is your responsibility to be committed to your own success and keep up with the pace of the class. To do so you need to complete assignments on time and please ask questions when you have them.

Out of Class Assignments: The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-class time per week over the span of a semester. WASC has adopted a similar requirement. This means you should plan on 3 hours of class time, plus an additional 6 hours each week for working outside of class. This means you should spend at least 9 hours working on math each week.

Course Rules:
1) Late work is not accepted. If you are going to be gone, contact me before the absence to make arraignments.
2) There are no make up tests.
3) It is your responsibility to drop or withdraw the class. Failure to do so will result in a regular grade (most probably an F).
4) Regular attendance is recommended and expected. The instructor can drop you from the class if you have more than the allowed number of absences.
5) You need to ask questions whenever you have them. If not in class, please come to my office during office hours, call me, email me, go to the math lab, google it, YouTube it, etc.
6) It is your responsibility to make up the work you missed if you are absent. I highly recommend finding someone else to copy notes and material from that were covered in your absence.

IVC Student Resources

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit http://www.imperial.edu/studentresources or click the heart icon in Canvas.

Anticipated Class Schedule/Calendar

Subject to change without prior notice

Week 1 2/10 – 2/14	Introduction Chapter 1.1, 1.2
Week 2 2/17 – 2/21	No Class - Chapter 1.3 Chapter 2.1, 2.2
Week 3 2/24– 4/28	Chapter 2.3 Chapter 3.1, 3.2
Week 4 3/3 – 3/7	Chapter 3.3/Review
Week 5 3/10– 3/14	Exam 1 Chapter 3.3, 3.4
Week 6 3/17 – 3/21	Chapter 3.4 Chapter 4.1, 4.2
Week 7 3/24 – 3/28	Chapter 4.3 Chapter 4.4, 4.5
Week 8 3/31 – 4/4	Chapter 4.6 Chapter 4.7, 4.8
Week 9 4/7 – 4/11	Review Exam 2
Week 10 4/14 – 4/18	Chapter 5.1, 5.2 Chapter 5.3, 5.4
Week 11 4/21 – 4/25	Spring Break
Week 12 4/28 – 5/2	Chapter 5.5, 5.6 Chapter 6.1, 6.2
Week 13 5/5 – 5/9	Chapter 6.3, 6.4,7.1 Review
Week 14 5/12 – 5/16	Exam 3 Chapter 7.2,7.3
Week 15 5/19 – 5/23	Chapter 8.1, 8.2
Week 16 5/26 – 5/30	Holiday Exam 4
Week 17 6/2 – 6/6	Review/Final

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