Cuyamaca College

Math 245 – Discrete Mathematics

Section 0765

Spring 2019

Instructor: Dan Curtis E-mail: daniel.curtis@gcccd.edu

Class Times: TTh 9:30-10:50 pm Room: H139

Office Hours: Monday 2:00 pm – 3:00 pm Office: H115

 Tuesday 11:30 am – 12:30 pm

 Wednesday 9:00 am – 11:00 pm

 Thursday 11:30 am – 12:30 pm

Website: [www.cuyamaca.edu/people/daniel-curtis](http://www.cuyamaca.edu/people/daniel-curtis)

Prerequisites: A grade of C or better in Math 280 or the equivalent.

Text and Materials:

* **Discrete Mathematics with Applications**, 4th Edition, Susanna S. Epp
* A graphing calculator is required. The TI 84+, TI 89, Voyage 200 or TI-Inspire are highly recommended.

Course Description: Introduction to discrete mathematics. Includes basic logic, methods of proof, sequences, elementary number theory, basic set theory, elementary counting techniques, relations, and recurrence relations.

Important Dates: Last day to add classes/Last day to drop Friday, Feb 8

 and qualify for a refund and to drop without

 receiving a “W”

 Last day to file a petition for Pass/No Pass Friday, March 1

 Last day to drop with a ‘W’ Friday, April 26

 **Final Exam** **Tues., May 28**

(Cumulative) 9**:30-11:30 am**

It is the student’s responsibility to take care of any administrative procedures involved in dropping should he/she stop attending class.

Grading: Your final grade will be based on the percentage of total points you earned, using the standard scale: A = 90% and above, B = 80-89.9%, C = 70-79.9%, D = 60-69.9%, F = below 60%.

Exams: There will be three exams (each worth 70-80 points) during the semester. Exam questions will be based on the homework, and I will review the material covered on the exam during class on the last class day before the exam. No makeup exams will be given, but if you contact me **before** the day of an exam, I may be able to make arrangements for an alternate time for you to take the exam. The final (worth 120 points) will be cumulative. Cell phones, or other communication devices, are not allowed on exams. Put them in your pocket or purse. If I catch you with one out, I will take your exam away and you will only receive credit for what you have completed.

Homework: Homework assignments will be from the textbook and will be collected on exam days. Each section’s homework is worth 2 points.

Quizzes: Throughout the semester, there will be a quiz at the start of class most Wednesdays that we do not have an exam (starting week 2). The quiz will consist of 1 or 2 problems. You will have 10 minutes to complete the quiz. The quizzes are 10 points each and your 2 lowest quiz scores will not be counted. Absolutely no makeups will be allowed for quizzes. Make sure you are on time.

Student Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Use recursion to analyze algorithms and programs;
2. Write proofs using symbolic logic and Boolean Algebra;
3. Use sets to solve problems in combinatorics and probability theory;
4. Apply matrices to analyze graphs and trees; and
5. Use finite state machines to model computer operations.

Attendance: Good attendance is a must for success in this class. College policy states that a student may be dropped from the course for excessive absences or tardies.

 **My Policy**: Four absences during the first four weeks or six absences during the entire semester and you may be dropped – arriving significantly late or leaving significantly early counts as half an absence.

Disability Support Services: Academic accommodations are available for students with disabilities. Please identify yourself to your instructor and to DSPS staff so that the appropriate accommodations can be ensured. DSPS is at A-300, LRC (660-4239)

Academic Honesty: Academic dishonesty of any type by a student provides grounds for disciplinary action by the instructor or college. If you cheat, there will be consequences: I may give you a zero on the assignment or a zero in the course, or other additional consequences, regardless of whether you were the giver or receiver of the cheating.

Misconduct: Disruptive or threatening behavior or any conduct that interferes with my ability to teach or another student’s ability to learn will not be tolerated. Such actions could result in a warning, removal from the class or referral to the Dean for disciplinary action. Please turn off your cell phones during class.

STEM Achievement Center: To support your efforts to succeed in this class, I refer you to the STEM Achievement Center (H-Building). The STEM Achievement Center is a resource center that provides individual assistance in mathematics and science. Instructors and student tutors are available to answer homework questions, give confidence, and support math students. Students also have access to graphing calculators, textbooks, instructional videos, and computer tutorial programs. Computers are also available for student use. A**ll math tutoring is by appointment only!** Appointments can be made at the front desk or by calling. The STEM Achievement Center is open Monday through Thursday 9:00-6:00, and Friday from 9:00 am to 2:00 pm. Additional hours are available on Tuesday and Wednesday from 6:00 – 8:00 pm in B-167 (the Writing Center).

Textbook Homework Problems:

1.1 read section

1.2 read section, 2, 3, 5, 6, 7, 9, 11

1.3 read section, 13, 14, 15

2.1 5, 6, 7, 9, 11, 12, 15, 18, 25, 27, 40, 41, 48, 50, 52

2.2 2, 4, 7, 16, 20, 22, 25, 26, 28, 29, 30, 36, 37, 38, 47, 49

2.3 1, 2, 5, 6, 9, 11, 12, 23, 24, 25, 26, 31, 38, 39, 40, 41

2.4 1, 3, 4, 13, 16, 18, 20, 25, 26, 28, 30

3.1 3, 4, 6, 8, 9, 13, 15, 17, 19, 26a, 28, 30, 33

3.2 2, 3, 5, 9, 11, 16, 19, 20, 30, 32, 35, 38, 43, 45

3.3 2, 3, 9, 11, 12, 14, 15, 18, 19, 29, 31, 33, 41

3.4 1ac, 4, 5, 8, 11, 12, 15, 17, 19, 31

4.1 1, 3, 5, 6, 9, 21, 22, 25, 29, 33, 36, 38, 39, 45, 58

4.2 4, 6, 8, 12, 18, 20, 27, 30, 31

4.3 1, 5, 9, 11, 12, 14, 16, 20, 21, 27, 28, 30, 36, 38

4.4 1, 3, 5, 7, 9, 13, 14, 16, 17, 20, 26, 28, 31, 36, 44

4.6 1, 2, 6, 7, 8, 9a, 16, 19, 23, 25, 30, 32ab, 33

4.7 1, 5, 7, 9, 13, 15, 24, 27, 28

5.1 1, 3, 5, 10, 12, 14, 19, 02, 24, 26, 29, 33, 35, 36, 37, 43, 46, 48, 52, 55, 58, 62, 65, 68, 71, 73, 75, 77

5.2 1, 3, 5, 6, 12, 22, 25, 30, 32, 33, 34, 35

5.3 1, 3, 6, 12, 16, 18, 20, 28, 31

6.1 1acef, 3, 5, 10, 11, 13, 15ac, 18, 27, 30, 31, 35

6.2 1, 2, 3, 6, 10, 12, 16, 22, 23ac, 25, 29

9.1 3, 5, 7, 8, 11, 18, 20, 21

9.2 2, 6, 9, 11, 14, 15, 16, 18, 19, 33, 34, 38

9.3 1, 3, 4, 5, 6, 13, 16, 19, 20, 22, 23, 33

9.4 1, 3, 4, 5, 9, 12, 13, 16, 24, 29, 30, 31

9.5 2, 3, 5, 6, 8, 9, 11, 12, 17, 19, 20, 22

9.6 1, 3, 4, 10, 11, 15, 17, 18, 19a

7.1  1, 3, 5ab, 7, 25, 26, 33, 51

7.2 2, 3, 5, 6, 7, 9, 10, 13, 15, 16, 22, 24, 44, 45

**Class Schedule**

|  |  |  |
| --- | --- | --- |
| Week | Tuesday | Thursday |
| Wk 1 (1/28) | Intro, Chapter 1 | 2.1 |
| Wk 2 (2/4) | 2.1, 2.2 | 2.2, 2.3 |
| Wk 3 (2/11) | 2.3 | 2.4, 3.1 |
| Wk 4 (2/18) | 3.1, 3.2 | 3.3, 3.4 |
| Wk 5 (2/25) | 3.4 | **Exam #1, Chapters 2 & 3** |
| Wk 6 (3/4) | 4.1 | 4.1, 4.2 |
| Wk 7 (3/11) | 4.2, 4.3 | 4.3, 4.4 |
| Wk 8 (3/18) | 4.6 | 4.7 |
| Wk 9 (4/1) | 5.1, 5.2 | 5.2, 5.3 |
| Wk 10 (4/8) | 5.3, 6.1 | 6.1, 6.2 |
| Wk 11 (4/15) | **Exam #2, Chapters 4 & 5** | 7.1, 7.2 |
| Wk 12 (4/22) | 7.2, 7.4 | 9.1 |
| Wk 13 (4/29) | 9.2 | 9.3 |
| Wk 14 (5/6) | 9.4, 9.5 | 9.5, 9.6 |
| Wk 15 (5/13) | **Exam 3****Chapters 6, 7, & 9** | 5.6 |
| Wk 16 (5/20) | 5.7 | **Review for Final** |
| Finals Week | **Final Exam****Tuesday, May 28****9:30-11:30 am** |  |