

MATH 189: Discrete Mathematics for Computer Science

Fall 2017

Instructor: Tara Sheehan, MB 233B, tsheehan@boisestate.edu

Office Hours: MW 1:50 pm-2:50 pm and by appointment

e-Textbook: Available at learn.zybooks.com

1. Sign in or create an account at learn.zybooks.com
2. Enter zyBook code.

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3. Subscribe. A subscription is **\$48** and will last until Jan 18, 2018.

Outline of topics covered:

- Propositional and Predicate Logic
- Proof Logic
- Logic Operators
- The Principle of Mathematical Induction and induction proofs
- Solving simple recursion equations
- Elementary Set theory and set operators
- Relations and functions
- Equivalence relations
- Combinatorial enumeration
- Basic elementary number theory
- Introductory graph theory

Student Responsibilities: Students are expected to

- attend every scheduled class period and fully participate in any assigned classroom activities
- make a valiant attempt to learn and understand the material
- ask questions and help others feel comfortable asking questions
- practice skills and learn to use correct notation for their ideas
- complete assignments on time
- be honest in giving credit to the work of others
- have their own long term best interest in mind as they complete their homework and exams
- help others learn the material
- give others time to think and reason for themselves

The Boise State catalog suggests that students plan on spending two hours outside of class for every credit hour taken. Math 189 is a four credit hour class and students should plan on spending at least 8 hours a week completing homework, reading the book and preparing for class. Students who are underprepared for the course may have to spend more time to achieve the level of success they desire. Students lacking algebraic dexterity may struggle to be successful in the course. As soon as you recognize that you have a deficiency, please seek help from the instructor. Almost no one remembers everything they have ever learned, so don't hesitate to ask for a reminder of forgotten skills.

Proofs: Students will be expected to analyze three different types of proofs during the semester. They will also be expected to write a nearly perfect proof by mathematical induction. The **proof analysis** will be weighted as **5%** of the course grade and the **induction proof** will make up **10%** of your grade.

Zybook homework: There will be assigned reading from the book. For each section assigned students are expected to complete the **participation and challenge activities** contained therein. The score you receive on those activities will be weighted as **10%** of the grade.

Participation: Students are expected to attend class every day and participate in the problem solving activities.

Participation points will be subjectively determined by the instructor. Students who are engaging in off topic conversation or doing homework for other courses are clearly not participating in class and other behavior may also be considered as non-participatory. Students are expected to work until the end of the class period. If more problems are needed to stay busy, students are responsible to ask. It is expected that participation activities will be done correctly before the end of the class period. Student groups should work to ensure all students have the correct concept. Students should ask if they are unsure of the concept after they have endeavored to complete the activity on their own.

Participation will be given a weight of **25%** toward the course grade.

Quizzes: There will be approximately 6-8 quizzes during the semester. They will be administered on Blackboard and will be open resource. The quiz average will be computed by dividing the total points earned on the quizzes by the total points available. The **quiz average** will be given a weight of **20%** toward your course grade.

Final Exam: The final exam will be closed book and closed notes. Calculators may be used during the exam, but no device that can connect to the internet should be available to students during the exam. Cell phones, etc. must be

stored in a bag or backpack during the exam. They should not be in your pocket or on your desk.

Final exam questions will be similar to those asked on the quizzes and homework.

Students are expected to take the final exam at the time listed for the course at registrar.boisestate.edu and as listed on the class schedule.

The final exam will make up 30% of your final grade for the course.

Summary:

Assignment type	Weight
Proof Analysis	0.05
Induction Proof	0.10
Zybook homework	0.10
Participation	0.25
Quizzes	0.20
Final exam	0.30

Grading: Grades will be based on the weighted average of points earned for homework, quizzes, proofs, and final exam. Grades will be assigned according to the table shown below. Borderline grades will be influenced by participation and enthusiasm in class.

A+	Greater than 97%
A	93% up to 97%
A-	90% up to 93%
B+	87% up to 90%
B	83% up to 87%
B-	80% up to 83%
C+	77% up to 80%
C	73% up to 77%
C-	70% up to 73%
D+	67% up to 70%
D	63% up to 67%
D-	60% up to 63%
F	Below 60%

Academic Honesty: I consider it a violation of the student code of conduct for students to receive so much help from other sources in completing any part of you assigned work that the grade you receive for the work is not closely correlated to how much you learned. It may be a surprise to some students that helping others receive a distorted grade is also a violation of the student code of conduct.

Helping each other learn the material is an honorable activity. Doing their homework for them so that it appears that they have learned is not honorable. Students who choose to violate the student code of conduct by either presenting

others work as their own, or by doing work for others will be subjected to a loss of points for the assignment or exam. There is also the possibility of receiving a failing grade for the course, for both those taking work from others and those giving their work to others. See Student code of conduct Article 2 Section 18A, B for more information.