

**Math 243, Discrete Mathematics in Computer Science**  
**Course Syllabus**  
**Spring 2016**

**Instructor and TA Contact Information**

Instructor: Dr. Katie Walsh

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Office Hours: M 2-3 and Th 3-4 in Math 305  
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**General Information**

Course Description: Set theory, logic, discrete structures; induction and recursion; graphs and networks; techniques of proof.

Prerequisites: Concurrent registration: MATH 129 or MATH 250A.

Course Objectives:

1. Students will learn how to state problems, solve problems and write in a precise mathematical way.
2. Students will learn mathematical proof techniques including direct proofs, proof by contradiction, and mathematical induction.
3. Students will learn problem solving techniques such as recursion and basic counting.
4. Student will learn about graphs and how they can be used to understand complex problems.

**Required Textbooks and Materials**

The textbook for this class is **Discrete Mathematics** by Ross and Wright

Another suggested reference text is: **Fundamentals of Discrete Math for Computer Science: A Problem-Solving Primer** Authors: Tom Jenkyns, Ben Stephenson  
(free download available)

Course website/D2L site:

<http://d2l.arizona.edu/piazza.com/arizona/spring2016/math243/home>

## **Communication with Students**

Announcements and important course information may be sent out via official University email or through D2L and/or Piazza. It is the student's responsibility to check for messages and announcements regularly.

## **Accessibility and Accommodations**

It is the University's goal that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, please let me know immediately so that we can discuss options. You are also welcome to contact Disability Resources (520-621-3268) to establish reasonable accommodations.

Please be aware that the accessible table and chairs in this room should remain available for students who find that standard classroom seating is not usable.

## **Attendance/Administrative Drops**

Daily attendance is expected from every student. Students who miss the first class meeting will be administratively dropped unless they have made other arrangements. In addition, students with more than 3 unexcused absences may be administratively dropped from the course. (See Administrative Drop Policy at <http://catalog.arizona.edu/2015-16/policies/classatten.htm>) If you need to miss class for unavoidable circumstances, contact your instructor as soon as possible. Please note the following:

- All holidays or special events observed by organized religions will be honored for those students who show affiliation with that particular religion,
- Absences pre-approved by the UA Dean of Students (or Dean's designee) will be honored.

It is the student's responsibility to notify the instructor in advance of an absence related to religious observation or an activity for which a Dean's excuse has been granted, and to arrange for how any missed work will be handled.

## **Academic Integrity**

Students are responsible to inform themselves of University policies regarding the Code of Academic Integrity. Students found to be in violation of the Code are subject to penalties ranging from a loss of credit for work involved to a grade of E in the course, and risk possible suspension or probation. The Code of Academic Integrity will be enforced in all areas of the course, including, but not limited to, homework, quizzes, and tests. For more information about the Code of Academic Integrity policies and procedures, including information about your rights and responsibilities as a student, see the following website: <http://deanofstudents.arizona.edu/academic-integrity/students/academic-integrity>

## **Student Code of Conduct**

Students at The University of Arizona are expected to conform to the standards of conduct established in the Student Code of Conduct. Prohibited conduct includes:

1. All forms of student academic dishonesty, including cheating, fabrication, facilitating academic dishonesty, and plagiarism.

2. Interfering with University or University-sponsored activities, including but not limited to classroom related activities, studying, teaching, research, intellectual or creative endeavor, administration, service or the provision of communication, computing or emergency services.

3. Endangering, threatening, or causing physical harm to any member of the University community or to oneself or causing reasonable apprehension of such harm.

4. Engaging in harassment or unlawful discriminatory activities on the basis of age, ethnicity, gender, handicapping condition, national origin, race, religion, sexual orientation, or veteran status, or violating University rules governing harassment or discrimination.

Students found to be in violation of the Student Code of Conduct are subject to disciplinary action. For more information about the Student Code of Conduct, including a complete list of prohibited conduct, see the following website: <http://deanofstudents.arizona.edu/accountability/students/student-accountability>

### **Other Relevant University Policies Relating to Conduct**

Please take note of the following University policies:

- Policy on Threatening Behavior by Students: <http://policy.web.arizona.edu/education-and-student-affairs/threatening-behavior-students>

- Nondiscrimination and Anti-Harassment Policy: <http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy>

### **Expected Classroom Behavior**

Students should turn off all electronic devices during class unless the device is deemed necessary for the class by the instructor. This includes, but is not limited to cell phones, mp3 players, and laptops. If you have a disability-related accommodation that involves the use of a computer during class, please discuss this with your instructor in advance.

## Homework & Quiz Policies

There will be 12 group homework assignments and 12 quizzes. HWs are due each Wednesday there is not an exam. Quizzes will be the following Friday and will cover the same material covered on the homework.

Each homework must be completed in a group of 3-4 students. Students must meet to discuss the solutions to the homework problems. Once all students agree on the solutions, it is one student's responsibility to write up and submit the assignment in class. Each assignment must be submitted with a group homework coversheet. Late homework will not be accepted. Each homework will be graded out of 20 points. Each student in the group will receive the same grade, unless an unfair division of labor is reported. The lowest two homework scores will be dropped. Overall, homework is worth 200 points towards the final grade.

Every student is responsible for writing up 3 homework assignments throughout the semester. In addition to homework assignments being graded for a group score, they will also be graded, out of 20 points, for a writing score. The writing score will take in to account correct mathematical language, grammar and clear explanations. Students will have the opportunity to correct their writing to increase their writing score. Overall, the writing score is worth 60 points towards the final grade.

Every Friday (except during exam weeks), there will be a quiz. Quizzes are worth 10 points each. The lowest two quizzes will be dropped. There will be no make-up quizzes, except in the case of excused absences. Quizzes are worth 100 points towards the final grade.

## Midterm Exams

There will be two midterm exams. They are on Feb 17 and April 6.

Makeup Exams will only be given in extenuating circumstances at the discretion of the instructor. If you miss an exam, you must contact the instructor via e-mail within 48 hours to discuss the possibility of a make-up. Make-ups will automatically be penalized 10% of the earned grade. If you are late to an exam, you will be allowed the entire 50 minutes, but extra time will also be penalized at the prorated rate and must be immediately following class.

Any academic integrity violation related to an exam will result in a grade of 0 on that exam and a referral to the disciplinary board.

## Final Exam

The final exam for the 12pm class (section 001) will be at 10:30am on Wednesday, May 11. The final exam for the 1pm class (section 002) will be at 1:00pm on Monday, May 9.

Please note the following:

- University rules relating to final examinations may be found at: <http://www.registrar.arizona.edu/schedule101/exams/examrules.htm>
- The University final exam schedule may be found at: <http://www.registrar.arizona.edu/schedules/finals.htm>

### **Missed Exam Policy**

Students who are unable to attend an exam should notify their instructor as soon as possible. Arrangements for a make-up test will be considered on a case by case basis. Make-up exams will be administered only at the discretion of the instructor and will be penalized 10% of the earned grade. If a student is allowed to make up a missed exam, (s)he must take it at a mutually arranged time. No further opportunities will be extended. Failure to contact the instructor as stated above (via e-mail within 48 hours) will result in a grade of zero on the exam.

### **Calculation of Course Grades**

The various components of the course grade will be weighted as follows:

Midterm Exam:  $2 \times 100 = 200$  points

Homework/Quizzes/WriteUps:  $10 \times 20 + 10 \times 10 + 3 \times 20 = 200 + 100 + 60 = 360$  points

Final Exam: 140 points

Course grades will be calculated based on the following scale: 90-100% A, 80-89% B, 70-79% C, 60-69% D, Below 60% E

A grade of "I" (Incomplete) will be given only at the instructor's discretion, according to University Policy as described at <http://www.registrar.arizona.edu/gradepolicy/incomplete.htm>.

### **Grading Disputes**

Any grading disputes must be addressed within one week after an exam or homework has been returned.

### **Withdrawal**

A student may withdraw from the course with a deletion from record through January 27, 2016, using UAccess. A student may withdraw with a grade of "W" through March 29, 2016, using UAccess.

### **Changes to the Course Syllabus**

The information contained in the course syllabus, other than the grade and absence policies, may be subject to change with reasonable advance notice, as deemed appropriate by the instructor.

**Tentative Weekly Schedule** A weekly schedule is available on the Google Calendar for this class which is posted on Piazza.