Syllabus[1] [2] **18 August 2016**

MAT 243 – Discrete Mathematical Structures – Fall 2016

Instructor: Alice Mark

Office Hours: Monday 2-3, Tuesday 11-12, and by appointment

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Any email you send to me must be sent from your official ASU email. All course correspondence will go to your `@asu.edu` account. You need to check this account regularly as it will be used for important announcements. If you notice a strange lack of announcements, check your spam filter.

FERPA does not allow me to discuss grades over email. If you have a question about grades, you need to make an appointment to come see me in person.

Class Time and Location: TTh, EITHER 1:30-2:45 OR 3-4:15 in WXLR A103

Schedule Line Number: EITHER 75943 OR 77850

Course Description: This course covers a broad range of topics in Discrete Mathematics, with an emphasis on proofs and connections to computer science. Topics include logic, mathematical reasoning, proofs, sets, functions, elementary number theory, combinatorics, algorithms, and recursion.

Text: Discrete Mathematics and Its Applications (7th Ed.) by Kenneth H. Rosen.

Calculators: You may use a calculator in class, and on exams, and you may use a calculator or computer algebra system on homework. Nothing that can do symbolic manipulation is allowed on exams, so a TI83 is allowed, but a TI89 or TI92 is not.

Blackboard: There is a blackboard site for this course on which will be posted: this syllabus, announcements, homework assignments, and grades. Please be sure to check it regularly.

Class style: The classroom is both active and interactive. You will be given problems to think about and discuss with your classmates. It is up to you to take advantage of this time and make it useful to you. In order to do this, you must really try the problems even when you don't know where to begin and ask questions as they arise even if they seem silly.

Working with others: You are encouraged to collaborate with your classmates on homework and in-class work. You may not collaborate on exams. If you collaborate on homework, you must write up your solutions yourself in your own words before you turn them in, and you must write the names of your collaborators on your assignment.

Here is a space to write down the names and email addresses or phone numbers of some of your classmates so that you can form study groups.

name: _____ contact: _____

name: _____ contact: _____

name: _____ contact: _____

name: _____ contact: _____

[1] Much of this syllabus was adapted, or copied with permission, from other syllabi for the same course.

[2] This syllabus is subject to change as necessary. Verbal or written announcements made in class, on blackboard, or over email are considered valid, official changes.

Assessment: Your grade will be determined using your performance on written work, online work, exams, and your attendance and participation class.

- **Written homework** (20% of your final grade): Written homework will be collected in class on Tuesdays. No late homework will be accepted, however the two lowest homework grades will be dropped. The problems will mostly be from the textbook, though there may be additional problems from other sources. No digital submissions, paper only please.

- **WeBWorK homework** (5% of your final grade): The WeBWorK problems will be due every Thursday. If you are not familiar with WeBWorK you should start by working out the Introduction to WeBWorK set (the Introduction will not count towards your grade). No late WeBWork will be accepted, however The two lowest WeBWork grades will be dropped.

- **Exams** (70% of your final grade): There will be 2 in-class midterms, each worth 20% and a cumulative final, worth 30%.

- **Attendance and participation** (5% of your final grade): Attendance is essential for passing this class. Missing more than 6 classes during the semester is grounds for failure. In a class of this size, participation and attendance are difficult to assess. For this reason, there are two types of written work that may be used to assess participation.

  - **Written in-class work** From time to time you will be asked to work on a problem in class and turn it in. Full credit will be given for thoughtful attempts and clear explanations, even if the methods are wrong or a solution is not reached. This will be used to take attendance, and as a way for me to gauge your overall understanding of the material as a class.
  - **Pre-class assignments:** Pre-class assignements will consist of some easy problems related to the material we will be covering in class, and will be due before class. They are designed to get you prepared to think about the material before coming to class. As with in-class work, credit will be given for thoughtful attempts that are incorrect or incomplete. They may be on WeBWorK, Blackboard, or due on paper in class.

  As a general rule, speaking up in class can never hurt you, and may in fact help. You can get full credit for participation by showing up, handing in your in-class work, doing pre-class assignments, and occasionally asking or answering questions in class. Further participation in class discussions may boost your grade at the end of the semester if you're right on the edge (at the discretion of the instructor).

Proofs: In this course you will learn to write proofs. Writing good proofs on homework and exams is important. Credit will be given for clarity and for writing in full English sentences.

Grading Scale: All numbers below are percentages.

E	D	C	C+	B-	B	B+	A-	A	A+
$[0, 60)$	$[60, 70)$	$[70, 76)$	$[76, 80)$	$[80, 83)$	$[83, 87)$	$[87, 90)$	$[90, 93)$	$[93, 97)$	$[97, 100]$

Tenatative Schedule:

Date	Book Section(s)	Topic(s)
8/18	1.1	propositional logic
8/23, 8/25	1.2, 1.3, 1.4	propositional logic, predicates, quantifiers
8,30, 9/1	1.4, 1.5, 1.6	quantifiers, rules of inference
9/6, 9/8	1.6, 1.7, (1.8), 2.1	proofs, sets
9/13, 9/15	2.3, 2.4	set operations, functions, sequences
9/20	2.2, EXAM 1 REVIEW	summations
9/22	EXAM 1	chapters 1 & 2
9/27, 9/29	3.1, 3.2	algorithms, growth of functions
10/4, 10/6	3.3, (8.3), 5.1	complexity of algorithms, induction
10/11	NO CLASS	FALL BREAK
10/13	5.1, (5.2), 5.3	induction, recursive structures
10/18, 10/20	5.3, 8.2	structural induction, recurrence relations
10/25	EXAM REVIEW	
10/27	EXAM 2	chapters 2, 3, 5, & 8
11/1, 11/3	4.1, 4.2, 4.3	divisibility, integer representations, primes, GCDs
11/8, 11/10	6.1, 6.2	counting, pigeonhole principle
11/15, 11/17	6.3, 6.4	permutations, combinations, binomial coefficients
11/22	8.5	the inclusion-exclusion principle
11/24	NO CLASS	THANKSGIVING
11/29, 12/1	9.1, 9.3, 9.5	relations, equivalence relations
12/8 at 12:10	FINAL EXAM 75943	
12/6 at 2:30	FINAL EXAM 77850	

Student Resources: There are many resources available to assist you in learning the material. In addition to **my office hours** and **your fellow students** in the class, there is the **The Math Tutor Center**. The tutor center is free of charge and is located in PSA-116. You must have a valid ASU Sun Card in order to be admitted. The Learning Resource Center has several locations on campus and specializes in small group tutoring sessions. For information visit `http://math.asu.edu/mathtutors`. There is also Drop-in Online Tutoring, available at `https://tutoring.asu.edu/online-tutoring`.

Course Policies: Students are responsible for assigned material whether or not it is covered in class. Students are responsible for material covered in class whether or not it is in the text. Working regularly on assigned problems and attending class are essential. You are expected to read the text, preferably before the material is covered in class.

Make Up Exam Policies: Make up exams are at the discretion of the instructor and will only be given in the case of verified medical or other emergency. The instructor must be notified before the exam is given. Email your instructor or call the Mathematics Department Office (480-965-3951) and leave a message.

The final exam schedule listed in the Schedule of Classes (`http://students.asu.edu/final-exam-schedule#fall`) will be strictly followed. Except to resolve those situations described below, no changes may be made in this schedule without prior approval of the Dean of the college in which the course is offered. Under this schedule, if a conflict occurs, or a student has more than three exams on one day, the instructors may be consulted about an individual schedule adjustment. If necessary, the matter may be pursued further with the appropriate dean(s). This procedure applies to conflicts among any combination of Downtown Phoenix campus, Tempe campus, Polytechnic campus, West campus, and/or off campus class.

Make-up exams will not be given for other non-emergency reasons. Students should consult the final exam schedule before making end-of-semester travel plans.

Course Withdrawal: August 24 is the last day to add/drop without college approval. November 2 is the course withdrawal deadline. December 2 is the complete session withdrawal deadline

A student may withdraw from a course with a grade of W during the withdrawal period. The instructors signature is not required. It is a students responsibility to verify that that they have in fact withdrawn from a class.

Instructor-Initiated Drop: At the instructor's discretion, any student who has not attended class during the first week of classes may be administratively dropped from the course. Non-attendance will not automatically result in a student being dropped from the course. The student should not assume they are no longer registered for a course simply because they did not attend class during the first week. It is the student's responsibility to be aware of their registration status.

Incompletes: A grade of incomplete will be awarded only in the event that a documented emergency or illness prevents the student who is doing acceptable work from completing a small percentage of the course requirements. The student must provide written documentation and be passing the class at the time to receive an Incomplete. The guidelines in the current general ASU catalog regarding a grade of incomplete will be strictly followed. The Dean of the students college must approve any exceptions to these rules.

Academic Dishonesty: Academic dishonesty, including inappropriate collaboration, will not be tolerated. Collaboration is inappropriate if it involves two students turning in identical or copied work, or work that was clearly done together without proper acknowledgment of collaborators. There are severe sanctions for cheating, plagiarizing and any other form of dishonesty. More information can be found at `http://www.asu.edu/studentaffairs/studentlife/judicial/academic_integrity.htm`

Disability Accommodations: If you have a disability that will require accommodations in this class, please schedule an appointment to see your instructor or come by during office hours. *Please do this at least a week before the first exam.* Note: To qualify for disability accommodations at ASU, students must qualify for services through the Disability Resource Center (DRC), which is located on the first floor of the Matthews Center Building at 480-965-1234 (voice) or 480-965-9000 (TTY). Please complete this process as soon as possible.

Student Conduct Statement: Students are required to adhere to the behavior standards listed in Arizona Board of Regents Policy Manual Chapter V Campus and Student Affairs: Code of Conduct (`http://www.abor.asu.edu/1_the_regents/policymanual/chap5/5Section_C.pdf`), ACD 125: Computer, Internet, and Electronic Communications (`http://www.asu.edu/aad/manuals/acd/acd125.html`), and the ASU Student Academic Integrity Policy (`http://www.asu.edu/studentaffairs/studentlife/srr/index.htm`). All students are entitled to receive instruction free from interference by other members of the class. If a student is disruptive, an instructor may ask the student to stop the disruptive behavior, warn the student that such disruptive behavior can result in withdrawal from the course, and, finally, in case of continuous non-compliance, the instructor may withdraw a student from a course under USI 201-10 `http://www.asu.edu/aad/manuals/usi/usi201-10.html`.