

THE DEPARTMENT OF MATHEMATICAL SCIENCES

## MATH 326: Discrete Analysis for Computer Engineers

### *Fall 2023 Course Syllabus*

**NJIT Academic Integrity Code:** All Students should be aware that the Department of Mathematical Sciences takes the University Code on Academic Integrity at NJIT very seriously and enforces it strictly. This means that there must not be any forms of plagiarism, i.e., copying of homework, class projects, or lab assignments, or any form of cheating in quizzes and exams. Under the University Code on Academic Integrity, students are obligated to report any such activities to the Instructor.

### COURSE INFORMATION

**Course Description:** An introduction to mathematical logic, Boolean algebra, and Karnaugh maps. Other topics include functions, equivalence relations and partially ordered sets, counting, graph theory and finite state machines. The emphasis is on computation but proofs will be addressed. Students cannot receive credit for both **MATH 226** and **MATH 326**.

**Number of Credits:** 3

**Prerequisites:** **MATH 112** with a grade of C or better or **MATH 133** with a grade of C or better.

**Course-Section and Instructors:**

Course-Section	Instructor
Math 326-003	Professor P. Ward

**Office Hours for All Math Instructors:** **Fall 2023 Office Hours and Emails**

**Required Textbook:**

Title	zyBook Discrete Math
Notes	<ol style="list-style-type: none"> <li>1. Sign in or create an account at <a href="https://learn.zybooks.com">learn.zybooks.com</a></li> <li>2. Enter zyBook code: NJITMATH326WardFall2023</li> <li>3. (A subscription is \$64.)</li> </ol>

**University-wide Withdrawal Date:** The last day to withdraw with a W is **Monday, November 13, 2023**. It will be strictly enforced.

### POLICIES

**DMS Course Policies:** All DMS students must familiarize themselves with, and adhere to, the **Department of Mathematical Sciences Course Policies**, in addition to official **university-wide policies**. DMS takes these policies

very seriously and enforces them strictly.

**Grading Policy:** The final grade in this course will be determined as follows:

Homework, Quizzes, and Class Performance	30%
Exam I	20%
Exam II	20%
Final Exam	30%

Your final letter grade will be based on the following tentative curve.

A	90 - 100	C	69 - 74
B+	85 - 89	D	60 - 68
B	79 - 84	F	0 - 59
C+	75 - 78		

**Attendance Policy:** Attendance at all classes will be recorded and is **mandatory**. Please make sure you read and fully understand the **Math Department's Attendance Policy**. This policy will be strictly enforced.

A grade of zero will be assigned for class participation every time you are absent from class. Absences from class will inhibit your ability to fully participate in class discussions and problem solving sessions and, therefore, affect your grade. Tardiness to class is very disruptive to the instructor and students and will not be tolerated. Each student should have contact information of several fellow students to get homework assignments and class notes when absent. You are responsible for everything that happens in class whether you are present or not.

**Homework:** Homework problems will be assigned in class or online.

**Exams:** There will be two midterm exams held in class during the semester and one comprehensive final exam. Exams are held on the following days:

Midterm Exam I	Week 5
Midterm Exam II	Week 10
Final Exam Period	December 17 - December 23, 2023

The final exam will test your knowledge of all the course material taught in the entire course. Make sure you read and fully understand the **Math Department's Examination Policy**. This policy will be strictly enforced.

**Makeup Exam Policy:** There will be **NO MAKE-UP QUIZZES OR EXAMS** during the semester. In the event an exam is not taken under rare circumstances where the student has a legitimate reason for missing the exam, the student should contact the Dean of Students office and present written verifiable proof of the reason for missing the exam, e.g., a doctor's note, police report, court notice, etc. clearly stating the date AND time of the mitigating problem. The student must also notify the Math Department Office/Instructor that the exam will be missed.

**Cellular Phones:** All cellular phones and other electronic devices must be switched off during all class times.

## ADDITIONAL RESOURCES

**Math Tutoring Center:** Located in the Central King Building, Lower Level, Rm. G11 (See: [Fall 2023 Hours](#))

**Further Assistance:** For further questions, students should contact their instructor. All instructors have regular office hours during the week. These office hours are listed on the Math Department's webpage for [Instructor Office Hours and Emails](#).

**Accommodation of Disabilities:** The Office of Accessibility Resources and Services (OARS) offers long term and temporary accommodations for undergraduate, graduate and visiting students at NJIT.

If you need an accommodation due to a disability, please contact the Office of Accessibility Resources and Services at [oars@njit.edu](mailto:oars@njit.edu), or visit Kupfrian Hall 201 to discuss your specific needs. A Letter of Accommodation Eligibility from the office authorizing student accommodations is required.

For further information regarding self identification, the submission of medical documentation and additional support services provided please visit the Office of Accessibility Resources and Services (OARS) website at:

<https://www.njit.edu/accessibility/>

**Important Dates** (See: [Fall 2023 Academic Calendar](#), [Registrar](#))

Date	Day	Event
September 4, 2023	Monday	Labor Day
September 5, 2023	Tuesday	First Day of Classes
September 11, 2023	Monday	Last Day to Add/Drop Classes
November 13, 2023	Monday	Last Day to Withdraw
November 21, 2023	Tuesday	Thursday Classes Meet
November 22, 2023	Wednesday	Friday Classes Meet
November 23 to November 26, 2023	Thursday and Saturday	Thanksgiving Recess - Closed
December 13, 2023	Wednesday	Last Day of Classes
December 14, 2023	Thursday	Reading Day 1
December 15, 2023	Friday	Reading Day 2
December 17 to December 23, 2023	Sunday to Saturday	Final Exam Period

## Course Outline

Week	Chapters	Topic
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1	1	Logic
2	1, 2	Logic, Sets
3	2	Sets
4	3	Proofs
5		<b>EXAM I (Tentatively Date: 10/3)</b>
6	3, 4	Proofs, Induction and Recursion
7	4, 5	Induction and Recursion, Functions
8	6	Boolean Algebra
9	7	Binary Relations
10		<b>EXAM II ( Tentative Date: 11/9)</b>
11	7	Orders
12	8	Graphs
13	8, 9	Graphs, Trees
14	9	Trees
15	<b>REVIEW</b>	<b>REVIEW</b>

*Updated by Professor P. Ward - 9/4/2023*  
*Department of Mathematical Sciences Course Syllabus, Fall 2023*