Course Name:	Discrete Structures
Course Code:	Math 181-01
Term:	Spring 2025
Credit Hour:	3
Modality:	Face to Face
Schedule:	M-W-F 1:10-2:00
Location:	Locke Hall Room B21

Instructor Information:

Name:	Drew Dickenson
Email:	macy.dickenson@bison.howard.edu
Phone:	(202) 770-2792 Cell
Office	ASB-B - #206
Location:	Virtual Office-Zoom Meeting ID:783 216 2518, Passcode: 569004
Office Hours:	M-W-F: 10:30-12:30

Course Syllabus

Course Description:

Algebraic structures applicable to computer science; semigroups, graphs, lattices, Boolean algebras, and combinatorics.

Course Objectives: Upon successfully completing the course, learners will be able to:

Demonstrate understanding and competent use of standard notation for:
• Mathematical logic including negation, conditional statements, biconditional statements, converse, contrapositive, truth tables, universal quantifiers, and existential quantifiers;
• Basic set theory, including set building, unions, intersections, set difference, and symmetric difference;
• Relations, equivalence relations, and functions;
• Structures of mathematical proof including direct proof, proof by contradiction, proof by contrapositive, induction proofs, and combinatorial proof;
• Basic combinatorics including the additive principle, multiplicative principle, pigeonhole principle, inclusion/exclusion, permutations, and combinations;

Prerequisite(s): MATH 157 - Calculus II with grade greater than or equal to C

Required Course Materials:
Textbook: Johnsonbaugh, R. Discrete Mathematics 8th ed.

Canvas: We will have homework assignments assigned on canvas. Course communication may occur through Canvas announcements.

Grading and Evaluation: Your grade in the course will be determined as follows:

- Homework 40%
- 2 Midterm Exams 20% Each
- Final Exam 20%

All activities will receive a numerical grade of 0–100. You will receive a score of 0 for any work not submitted. Your final grade in the course will be a letter grade. Letter grade equivalents for numerical grades are as follows:

Letter Grade Scale	
90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
< 59	F

To receive credit for the course, you must earn a letter grade of C or higher on the weighted average of all assigned course work (e.g., assignments, discussion postings, projects, etc.). Graduate students must maintain a B average overall to remain in good academic standing.

Attendance and Participation Policy:

All students are expected to attend classes regularly and promptly. Students are expected to participate in class discussions and group projects. Students should not leave the class while it is in progress unless it is extremely urgent or an emergency. Students that are absent for health reasons are expected to present documentation as soon as possible. If you are absent from classes or laboratory periods, you are still responsible for the work missed. If you miss a scheduled midterm or final exam, you must obtain your instructor's approval to take a substitute exam or you will receive a grade of zero for the exam.

Course Schedule / Outline

Week:	Dates:	Lesson Objectives:	Readings
1	January 13,15,17 2025	Logistics, What does Discrete mean, Sets	Chapter 1.1
2	January 22,24 2025	Propositions, Conditional Statements, Logical Equivalence	Chapter 1.2 Chapter 1.3
3	January 27,29,31 2025	Arguments and Rules of Inference	Chapter 1.4
4	February 3,5 2025	Propositional formulas and quantifiers	Chapter 1.5
5	February 10,12,14 2025	Nested Quantifiers Mathematical Systems and Direct proofs	Chapter 1.6 Chapter 2.1
6	February 19,21 2025	Mathematical Systems and Direct proofs More methods of proof, Mathematical induction	Chapter 2.1 Chapter 2.2
7	February 24,26,28 2025	Indirect Proofs Midterm 1	Chapter 2.2
8	March 2,4,6 2025	No class Spring Recess	No class Spring Recess
9	March 9,11,13 2025	Mathematical Induction	Chapter 2.4
10	March 16,18,20 2025	Basic Mathematical Structures: Functions	Chapter 3.1
11	March 23,25,27 2025	Functions Sequences and strings Relations	Chapter 3.1 Chapter 3.2 Chapter 3.3

12	March 30 April 1,3 2025	Relations Basic Counting Principles	Chapter 3.3 Chapter 3.4 Chapter 6.1
13	April 6,8,10 2025	Addition principle Inclusion-Exclusion	Chapter 6.1
14	April 13,15,17 2025	Permutations and Combinations	Chapter 6.2
15	April 20,22,24 2025	Generalized Permutations Generalized Combinations Binomial Coefficients and the Binomial Theorem Pigeonhole principle	Chapter 6.3 Chapter 6.7 Chapter 6.8
Final Exam	May 2 11:00 am- 1:00 pm		

University Services

Academic and Student Support Services

For Tutoring Services, visit the [Tutoring & Learning Support Services Office](#).
For Writing assistance, visit the [Writing Center](#).
For Library Services, visit the [Howard University Libraries](#).
For Academic Advising, visit the [Academic Advising Services](#).
For general student academic support, visit the [Center for Academic Excellence](#).
For general student support, visit the [Division of Student Affairs](#).

Technology Support
Enterprise Technology Services:
- For questions about the LMS or third-party tools, visit [My Helpdesk](#) and select LMS Support
- For general tech support questions visit [My Helpdesk](#) and select Technical Support.
- To contact ETS: **Phone & Email**
  Phone: 202-806-2020
  Email: huhelpdesk@howard.edu

LMS Support:
- Canvas has 24/7 support via chat or call 1-877-686-8251. To access Canvas Chat, please click on the Help icon in the bottom left-hand corner of your Canvas Dashboard.
- To contact ETS: **Phone & Email**

Phone: 202-806-2020
Email: huhelpdesk@howard.edu

Proctorio Support:
- ETS Proctorio support, visit here for Frequently Asked Questions (FAQs)
- To contact Proctorio: 24/7 technical support to students
  Phone at (480) 428-4089 or toll-free (866) 948-9248.
  Email support@proctorio.com

University Statements and Compliance

The Americans with Disabilities Act (ADA)

Howard University is committed to creating an accessible, inclusive, and safe learning environment for all students and providing equal access to students with documented disabilities. Students seeking reasonable accommodations must first register with the Office of Student Services (OSS). There you can engage in a confidential conversation about the process for requesting reasonable accommodations in the classroom and clinical settings, which the Office of Student Services (OSS) determines. Accommodations must be requested each semester. Accommodations are not provided retroactively. If you want to request accommodations, please contact OSS via email at oss.disabilityservices@howard.edu or visit https://howard.edu/disability-services.

COVID-19 Statement

The indoor mask mandate has been lifted on campus for all faculty, staff, students, and visitors, with a notable exception like patient settings. Faculty may continue to require masks for individual classes. In those classes where a face mask is required, students will be directed to leave the classroom if a face mask is not worn properly to cover the nose and mouth. Any student who refuses or fails to comply with a specific classroom requirement to wear a face mask, and any other measures the University advances for the safety and protection of the Howard Community, will constitute a violation of the University's Student Code of Conduct and could result in sanctions up to and including expulsion from the University.

LGBTQ+

Howard University is committed to providing an educational, living, and working environment that is welcoming, respectful, and inclusive of all members of the University community, including all sexes, sexual orientations, gender expressions, and gender identities. For more information please contact the Division of Student Affairs.

Educational Benefits and Opportunities

No member of the University Community shall deny a student fair access to all educational opportunities and benefits available at the University. To find more information on this policy, please refer to the [Code of Ethical Conduct](). To report a concern, visit the [Office of Student Affairs]().

The Family Educational Rights and Privacy Act (FERPA)

It is the policy of Howard University (the "University) to ensure that information contained within the education records of all students is protected to the fullest extent of the law.
To find more information about this policy visit the [FERPA Policy]() page.

Title IX Statement

Howard University's *[Policy Prohibiting Sex and Gender-Based Discrimination, Sexual Misconduct and Retaliation]()* (aka, the Title IX Policy) prohibits discrimination, harassment, and violence based on sex, gender, gender expression, gender identity, sexual orientation, pregnancy, or marital status. With the exception of certain employees designated as confidential, note that all Howard University employees – *including all faculty members* – are required to report any information they receive regarding known or suspected prohibited conduct under the Title IX Policy to the Title IX Office ([TitleIX@howard.edu]() or 202-806-2550), regardless of how they learn of it. For *confidential* support and assistance, you may contact the Interpersonal Violence Prevention Program (202-836-1401) or the University Counseling Service (202-806-7540). To learn more about your rights, resources, and options for reporting and/or seeking confidential support services (including additional confidential resources, both on and off campus), visit [https://howard.edu/title-ix]().

Academic Code of Conduct

Howard University is a community of scholars composed of faculty and students both of whom must hold the pursuit of learning and search for truth in the highest regard. Such regard requires adherence to the goal of unquestionable integrity and honesty in the discharge of teaching and learning responsibilities. The prescribed policies and procedures that pertain to violation of the academic integrity policy are contained in the [Student Handbook](). Please note include the appropriate student handbook from your perspective college or school (e.g. Howard university school of law student handbook, etc.)

Expected Computer and Digital Information Literacy Skills

The following computer skills and digital information literacy skills expected for this course include:

- Using the learning management system (Canvas)
- Using email
- Uploading and downloading documents, files, etc.
- Using web conferencing tools and software
- Using remote/virtual libraries and databases
- Properly citing information sources

For assistance with these skills please visit [Distance Learning for Students Orientation](#).

Communication Policy

- If you have any questions regarding the course, feel free to post them in the **Café forum** in the Discussion Board (DB). If you know the answer to a posted question, please feel free to respond. In this way, we leverage collective knowledge and participants may receive a quicker answer.
- Use Standard English in all areas of communications. Although many Internet users are accustomed to lower-case writing and abbreviations, our written exchange should reflect the educational setting in which we are operating. Therefore, out of respect for our institution, as well as to model good practices for our distance learners, please use only polished, thoughtful written expression.
- Always use the Spell Checker option of this new version of Canvas which you can find in the menu; it looks like a checkmark that includes the letters ABC.
- Do not hesitate to ask questions, give suggestions, or raise an issue during the course. If you feel lost or frustrated, please contact one of the facilitators as soon as possible, and let others help you. Learning to find help is an important learning strategy that should be accomplished / mastered by the end of this course.

Course Components	What you may expect from the facilitators:	What is expected of you:
Email	An instructor will respond to your e-mails within 24 to 48 hours. We often check our email and typically respond promptly. However, please allow an entire business day before emailing again on the same question or issue. Emails sent on Saturday or Sunday will receive a reply by Monday or Tuesday. Please do not expect to receive returned email from your instructor on Saturdays or Sundays.	If you have a personal question, please send an email. Questions regarding the course content should be posted in the discussion forum titled – Café. Please sign all your emails with your full name.
Phone	You are welcome to call your instructors, although our preferred communication is through email. If it is a matter of solving a technology question, please email the helpdesk at helpdesk@howard.edu. Please be aware that your instructors are not available to return or receive your calls on Saturdays or Sundays.	If you do not receive a response follow up. Be sure to check your emails to ensure you are responsive should the helpdesk have questions. Include your full name, name of the course, name of the instructor and a clear description of your issue. Provide a good contact number should they need to call you back.

Announcements	We will post new announcements to alert you of any new happenings in our course, or the lab.	Read the announcements for any new updates and the important notices from the facilitators.
Virtual Office Hours	We will be available to make an appointment with you should you require additional assistance outside of our established lab sessions. Please be aware that it will be imperative to email us to set up an appointment time and we will be available virtually.	Contact the facilitators of this course to set up additional time to meet as well be prepared to utilize the Canvas Collaborate or the designated web conferencing medium selected feature in order to access us virtually during your appointed time.

Privacy Policies
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Flickr
McGraw Hill Campus & Higher Education
Microsoft
Pearson My Lab & Mastering
Poll Everywhere
Proctorio
SlideShare
Wiley Course Resources & Wiley Plus
YouTube