

Discrete Mathematics (MAT 4522) Fall 2021

Day/ Time: MWF Periods 5-6
Instructor: Dr. Michael Niemeier
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Classroom: BU 204
Office: Elliot Hall 007
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Office Hours: Monday 12:00-1:00 and 4:00-5:00
Tuesday 10:00-12:00
Wednesday 12:00-1:00 and 4:00-5:00
Thursday 10:00-12:00
Friday 12:00-1:00 and 4:00-5:00

Or by appointment. (To make an appointment stop by my office or send me an email!)

Required Text:

- Epp, Discrete Mathematics with Applications; 4th edition; Brooks/Cole; 2011.

Prerequisite:

- Pre-Calculus for Advanced Placement 2 or the equivalent.

Course Content:

Chapter 1 Speaking Mathematically 1.1-1.3

Chapter 2 The Logic of Compound Statements 2.1-2.3

Chapter 3 The Logic of Quantified Statements 3.1-3.4

Chapter 4 Elementary Number Theory and Methods of Proof 4.1-4.7

Chapter 5 Sequences, Mathematical Induction and Recursion 5.1-5.4, 5.6-5.8

Chapter 6 Set Theory 6.1-6.3

Chapter 7 Functions 7.1-7.4

Chapter 8 Relations 8.1-8.3

Chapter 9 Counting and Probability 9.1-9.9

Chapter 10 Graphs and Trees 10.1-10.5, 10.7

Grading:

Grades for the course and assignments are assigned by the following percentages:

	100-92.5 — A	92.4-89.5 — A-
89.4-87.5 — B+	87.4-82.5 — B	82.4-79.5 — B-
79.4-77.5 — C+	77.4-72.5 — C	72.4-69.5 — C-
<69.5 — D*		

The final grade in the course will be determined by the following factors:

Homework:	10 %
Quizzes:	10 %
Midterm exams:	60% (15% each)
Final Exam:	20%

Assignments:

Homework

There will be a homework assignment for every section, given in class and also posted on Canvas. Homework will be collected on a regular basis and checked for both completeness and accuracy.

Quizzes

There will be weekly short quizzes over the material covered the previous week with problems similar to homework questions. Depending on the number of quizzes, I will drop up to the lowest two quiz scores from consideration for the overall quiz grade.

Exams

At the end of each chapter or couple of chapters, there will be a midterm exam covering that material. The exams will not be cumulative in the sense you will see questions directly from previous test material, but mathematics is cumulative so that you may need to apply knowledge from previous test material in order to solve new problems.

Final Exam

Finally, near the end of the course, you will have a cumulative final exam. The final exam will replace your lowest midterm exam score, provided it would improve your grade. (It will only replace **one** of your midterm exam scores, so be sure to prepare adequately for each exam!)

Tentative Schedule for Exams:

Exam 1 (Sections 1.1-1.3, 2.1-2.3, 3.1-3.4) Friday September 10th

Exam 2 (Sections 4.1-4.7, 5.1-5.3) Friday October 8th

Exam 3 (Sections 6.1-6.3, 7.1-7.4, 8.1-8.3) Friday November 5th

Exam 4 (Sections 9.1-9.5, 10.1-10.5) Friday December 3rd

Final Exam (Sections 1.1-1.3, 2.1-2.3, 3.1-3.4, 4.1-4.7, 5.1-5.3, 6.1-6.3, 7.1-7.4, 8.1-8.3, 9.1-9.5, 10.1-10.5)

TBA

Academic Integrity:

As a firm believer that grades should reflect learning, academic integrity is paramount to the academic experience. Please review the Academy's Academic Integrity policy as it will be strictly adhered to in my class.

Examples of behavior subject to review under the Academic Integrity policy include, but are not limited to:

1. Copying someone's work and turning it in as one's own
2. Use of aids and/or other materials on quizzes and exams without expressed permission.

3. Use of calculators when explicitly forbidden to do so.
4. Copying another person's work or answers on a quiz or exam.

I encourage you to work in groups when doing the homework assignments as much can be learned from your peers that you may not always pick up in class. However, each individual is required to turn in work in their own handwriting accompanied by the requisite work shown to receive full credit.

Technology:

The use of technology is limited to that which will enhance the learning process. Your laptops, cell phones, and other internet-ready devices should be closed/turned off, and put away, or flat on your desk being used as a notebook during class time unless given permission by the instructor for a specific class period.

Attendance:

Attendance will be taken at the beginning of the hour. You are responsible to be on time for each class period. Failure to attend class will result in disciplinary action as set forth by Academy policy regarding absences and tardiness. You will be considered absent if you arrive more than 10 minutes late. However, I recommend still coming to class, even if you will be marked absent in order to miss as little critical information as possible.

Late Work/ Make-up policy:

It is my policy not to accept late work/ allow make-up work unless there is an excused absence the day an assignment was due. If you can't be in class the day an assignment is due, please bring it by my office or send me an email with it as an attachment. If you miss a quiz or exam due to an excused absence, it is up to you to schedule a time with me (office hours or other) during which you can take the exam or quiz. You must contact me within a week of the missed assignment and complete the assignment within two weeks of missing it.

*If you must take a quiz or exam online, then it will be proctored while in a Zoom session. You must contact me the week of a quiz or exam to schedule a time to take the exam over Zoom.

Indiana Academy Mask Policy

The Indiana Academy will follow [Ball State University's mask policy](#) (see Section IV). Based on current CDC guidance recommending the wearing of face masks for all people—regardless of vaccination status—in public indoor settings in communities where the rate of coronavirus transmission is high or substantial, all employees, students, and campus visitors are required to wear a mask while inside any University building. This requirement is effective on August 9, 2021. Fully vaccinated people are not required to wear masks outdoors.

Individuals who are not fully vaccinated for COVID-19 are required to wear face masks while inside campus buildings and outside when physical distancing cannot be maintained.

If a student declines to wear a face mask as required, the student will be referred to the Director of Academic Affairs or the Director of Residential Affairs. If the situation occurs in a classroom or other academic setting, it is considered a classroom management issue, and the teacher will remind the student of the requirement and give the student a chance to comply with it prior to referring the matter to the Director of Academic Affairs or the Director of Residential Affairs. Wearing masks is crucial to preventing the spread of COVID-19 to others.

Diversity Statement:

Ball State University aspires to be a university that attracts and retains a diverse faculty, staff, and student body. We are committed to ensuring that all members of the community are welcome, through valuing the various experiences and worldviews represented at Ball State and among those we serve. We promote a culture of respect and civil discourse as expressed in our Beneficence Pledge and through university resources found at <http://cms.bsu.edu/campuslife/multiculturalcenter>.