Fall 2024 Math 232 Section 01 - Discrete Math Syllabus

Contact Information

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Classroom: Kendade 203

Office hours: MW 3-4pm, R 1:30-2:30PM You are encouraged to schedule appointments regularly. Appointments can be made for small groups as well.

Lectures: MWF 10:00AM - 11:15AM

All times are EST.

Required textbook

Discrete Mathematics with Graph Theory, 3rd Edition, Goodaire and Parmenter

The course textbook is very dense. We will not cover everything from the sections we encounter. Instead, certain content from the sections we cover will be emphasized. The reading material (see below) is a good indication of the essential content of each covered section.

You may access the book through the library using the following information.

Call number: QA39.3 .G66 2018

Course Web page

All course information will be posted on the course web page at https://derekyoungmath.bitbucket.io/fall_24_232_01/. Please check the course web page frequently for all assignments, solutions and other resources.

Zoom Meeting

Any Zoom meetings will be hosted at the following link https://mtholyoke.zoom.us/j/99679423499. During the meetings you are required to keep your video on throughout the meeting unless you have a reason for turning it off.

Computer Software

Use of computer software to help you answer questions on assessments or exams is prohibited.

Course Objective

In this course, we will focus on writing proofs and exploring mathematical objects in a variety of discrete(not continuous) mathematical topics. By the end of this course you will be able to clearly articulate mathematical arguments through written proofs and solve problems related to a variety

of different discrete math objects. The type of proof techniques that you will master include direct proofs, proof by contradiction, contrapositive, and mathematical induction. The discrete topics that will be covered are Sets, Functions, Integers, Principles of Counting, Permutations, and Combinations. You will also be introduced to graph theory.

Participation/ Attendance: Participation and attendance for this course is mandatory. There will be individual and group assignments given and due during the course meeting times. If you are not able to attend, you are still responsible for the material covered. There will be in-class worksheets which will be discussed in groups and each person is expected to participate in their group. Assessments and exams will also be taken in class.

Before Class

Reading Material Reading material is content from the course book which is related to the next lecture. Reading this content before the next lecture will open your brain so that I can dump math inside.

Some of the reading content will require you to know terminology which we will have not yet covered. This means you will have to learn the unfamiliar terms in the reading by scanning the previous content from the assigned section.

Reading material is assigned each lecture and will be posted on the course page under the date on which it is assigned.

Reading Questions Reading questions are questions that are related to the reading material.

Reading questions will be posted on the course survey page `https://derekyoungmath.pythonanywhere.com/fall_24_232_01_reading_questions` at least 2 hours before each lecture and will be due before each lecture.

Reading questions will be graded on a credit no credit basis.

During Class

Groups At the beginning of the semester I will be putting you into groups. If you would like to be in a group with someone please let me know via email as soon as possible. By the end of the second week of classes you should be assigned a permanent group.

Working in groups is supposed to help you learn better than working by yourself. With this being said, it may take time for everyone in your

group to get on the same page. Once this is done you should have more resources. Please let me know as soon as possible if working in your group is not benefiting you.

You will work with your group to discuss reading questions. You will also work with your group to solve the worksheet problems (see below).

Lectures

During the lectures you should take notes in a notebook. You won't have to write down everything that I write down because I will be posting the lecture notes on the course page after each lecture. During the lectures, it is a good idea to write down questions, comments, and ideas. By the way, if you have any questions during the lecture feel free to stop me and ask your questions. You don't have to raise your hand. Chances are I won't see your raised hand immediately if you decide to raise it because I will probably be writing.

Worksheets

Worksheets are a set of problems directly related to the lecture material as well as the homework assignment. If you understand everything from the lecture then correctly answering the first couple of problems from the worksheet should be easy.

After each lecture a worksheet will be assigned which you will work on with your group.

Everyone should be writing their own solutions to the problems. You have probably heard this before but I will let you know anyway. You will gain a relevant understanding of the solution if you put it in your own words.

Journals

Journals are a collection of your solutions to the problems from the worksheets. To create your journal you will need to scan your worksheets and merge them to create one pdf file.

Journals will be due on the same day of the homework assignment.

Journals will be graded on a credit no credit basis.

Assessments

Assessments are opportunities for **you** to communicate your understanding of the problems from your homework assignment. Therefore if you don't understand how to do a problem on your homework assignment you should get help before turning in your homework assignment.

Assessments are opportunities for **me** to give you feedback on your understanding of the problems from your homework assignment.

There will be weekly assessments which are based off of the homework problems. The assessments will be given at the end of class on Fridays and will last 15-20 minutes.

EXAMS

Exams are opportunities for **you** to express your understanding of the content from the lectures. A good way to prepare for the exams is to review the problems from the journals, assessments, and homeworks.

Exams are opportunities for **me** to give you feedback on your understanding of the content from the lectures.

There will be 2 in-class exams given during the regularly scheduled class period. Please see the schedule posted on the course web page for all exam dates.

After Class

HOMEWORK

Homework will be assigned once a week. Homework assignments will typically be assigned on Wednesday and due 5:00PM EST on the Friday of the next week. Deadlines for homeworks are strict. Please see the schedule on the course web page for homework due dates. You are allowed to share ideas with other students on homework assignments, but you are expected to submit your own answers.

Each week you will turn in assigned problems for the book. It is not enough to turn in correct solutions for these problems. You will need to study the assigned problems. Hence you need to know what you know and what you don't know about the problems before you turn in the assignment. If you are able to present your homework problems to someone in the class without using any resources(including your soluitons) then you are prepared to turn in your assignment. Otherwise, get help (See how to do this below.) ASAP or do more problems!

Having a concrete understanding of the homework problems before you submit the homework assignment is important since you won't be getting feedback on your assignment before you take your assessment related to the assignment. If you would like verbal feedback on your assignment before taking the assessment related to the assignment come see me during office hours. You may also check with the TA.

You may redo any problem that you incorrectly answer. However, your redo is due by the due date of the next homework assignment.

REDOS

You will be allowed to redo problems on homeworks, assessments and exams by resubmitting the problems from the assignment. Each assignment can be redone once for a maximum of 90% of the assignment. For in-class exams, your redo can only increase your score by 20%. You will have one week from the time your assignment is returned to submit any redos. In order to redo any assignment you must attend class on the day the material from the assignment was covered. Also, you must submit the assignment by the deadline in order to redo it.

Grading

Grading

5.0% – Reading Questions

10.0% – Journals

25.0% – Homeworks

20.0% – Assessments

25.0% – Exams

15.0% – Final Exam

Grading Scale

A	$93-100\%$	C	$73-76\%$
$A-$	$90-92\%$	$C-$	$70-72\%$
$B+$	$87-89\%$	$D+$	$67-69\%$
B	$83-86\%$	D	$63-66\%$
$B-$	$80-82\%$	$D-$	$60-62\%$
$C+$	$77-79\%$	F	$0-59\%$

Advice

Disability Services Statement

If you need official accommodations through Disability Services, you have a right to have these met and kept confidential. Please contact Disability Services, disability-services@mtholyoke.edu. If you are eligible for academic accommodations, you will be provided with an accommodation letter.

To use an accommodation, request to use the accommodation in advance. This gives me time to prepare for the accommodation.

Once you receive your accommodation letter, please book an office hours appointment with me. We will discuss your approved accommodations and how to make them work for our class.

For more information on who might be eligible for accommodations and the application process, please see the Disability Services website. (www.mtholyoke.edu/directory/departments-offices-centers/disability-services)

Academic Integrity

"Aka the Honor code aka Don't Cheat!" You need to put in hard work in order to learn, thus it is very important for you to follow the Honor Code

in all of your work.

Collaboration on homework assignments is encouraged. All weekly homework assignments will require you to disclose collaborators and outside resources.

It is a violation of the honor code to use sources like a solution manual or chegg.com without citing them. I highly suggest this resource about citing sources and understanding plagarism: from LITS, How to Use Sources Properly.

Assessments and exams will be closed book (no outside resources allowed).

If plagiarism or cheating occurs, you will not be given credit for that assignment and that assignment may not be redone.

If you have any questions about what constitutes an Honor Code violation in this class, please talk to me! Honor Code violations will be brought to the Academic Honors Board.

GETTING HELP When you struggle, the following are sources to access more help:

1. Me! Please, please let me know repeatedly that you need more help. The earlier the better. This is what I am here for. You can not bug me enough.
2. Ask classmates! Form a study group! Post extra questions to the course forum!
3. Ask the TA/grader in the help sessions.
4. Talk to me about getting personalized help from a tutor.

COVID 19 Please try to keep everyone safe. The well-being and health of our entire class is of most importance. The College has the expectation that every student, staff, and faculty member will act responsibly to keep everyone safe.

This includes:

1. Wearing a snug-fitting, multi-layered mask over your mouth and nose in class (at all times). If someone forgets their mask, quickly and politely remind them.
2. Refraining from drinking or eating in our shared classroom space. If you need to do so, please just step outside for a quick break.
3. Not coming to class when you are sick! There is a great deal of flexibility built into my syllabus– please take advantage of that. (Also, I know many

people– like me– have pretty serious seasonal and animal allergies– this is one reason regular testing is so important!)

4. Abiding by the Community Compact https://www.mtholyoke.edu/opening-gates/community-compact-students.
5. Understanding that this remains an uncertain and difficult time for many of us. Generosity, grace, and kindness are critical to the well-being of our community.

   If you need to miss several consecutive classes because of illness, isolation protocols, or childcare issues, please email me and your Class Dean as soon as possible to make arrangements.

How to increase your grade in the course

Communicate with me as much as possible. Show me that you are consistently learning the material. This can be done by asking and answering questions in class, attending office hours, attending ta hours, sending me an email, or acing your assignments.

Example A - Jane Doe started the semester getting C's on all of her assignments. However, Jane booked several appointments with me throughout the semester. Our verbal conversations clearly indicated that Jane was consistently progressing after reaching out to me. Jane finished the course with an A even though her final percentage grade was below the A requirement.

Example B - Sue May started the semester getting A's on all of her assignments. However, Sue often missed class and rarely responded to my emails about attending office hours regarding problems that were incorrectly answered on her assignments. Sue did poorly on her final exam which dropped her course average right below the A range. At the end of the semester Sue emailed me asking to increase her grade to an A because she felt she deserved an A because she maintained an A average throughout the semester. Sue was denied the request and received an A-.

In the first example it was easier for me to justify why Jane should earn a grade other than the grade she earned from her assessments. On the other hand, Sue only communicated with me via written assignments.

Note

The syllabus may be changed at anytime.