MATH 200 - Discrete Mathematics

Spring 2020
Syllabus

Math, but only sorta.

Just the Facts

Course Number: MATH 200
Title: Discrete Mathematics
Semester: Spring 2020
Meeting Time: MWF 9:20 - 10:30am
Locale: Schaefer 161
Instructor: Alan Jamieson
Office: Schaefer 154
Office Hours: T 10-11am, W 12:30-2pm
Email: acjamieson@smcm.edu
Google Messenger: acjamieson@smcm.edu
Slack: via MATH200 Group
Online Office Hours: Most evenings and weekends
Required Textbook: *Richard Hammack, "Book of Proof - Third Edition", Open Textbook Library. https://open.umn.edu/opentextbooks/textbooks/book-of-proof*
Website: http://ripark.github.io/s20/math200

Catalog Description: Set theory, elementary logic, sequences and mathematical induction, functions and relations, counting techniques, matrix theory, graphs and trees. MATH 200 satisfies the Core Curriculum requirement in Mathematics. MATH 200 assumes more mathematical preparation than MATH 131.

Overview: In this course you will be introduced (or re-introduced) to the many aspects of mathematics that computer science practicioners use day-to-day. Things like Boolean logic, induction, combinatorics, and graphs have extensive use depending on the area of computer science, and many parts are useful outside of the discipline.

Purpose: Turns out that computer science isn't actually science. Rather, it is a specific (and large) subdiscipline of applied mathematics. As you would expect, this means that the mathematics required to be a computer scientist is quite broad. This course, more than any other in the curriculum, gives you the baseline mathematical knowledge to be successful in future computer science endeavors. Some of the topics are even fun!

Grade Distribution:

Written Assignments/Projects (2) - 15% each
Homework - 25%
Participation - 5%
Midterm 15%
Quizzes - 5%
Final - 20%

You will be expected to participate in class by asking questions and answering questions posed by myself and those in class. Rather than a drab lecture, the class sessions will be run in a discussion style environment. Activity and debate are highly encouraged.

Learning Objectives: At the completetion of MATH 200, students will be able to:

use functions and relations as demonstrated by verifying properties of functions and relations using their formal definitions.

illustrate set theoretical concepts including union, intersection, and complement as demonstrated by solving problems involving sets.

model graphs (including trees) as demonstrated by representing appropriate data with graphs and making mathematical arguments about their properties.

compose a bibliography in the appropriate citation format for Mathematics as demonstrated by writing a paper with proper citations about a topic relevant to the course.

to implement various proof techniques including induction as demonstrated by writing several proofs about counting techniques and elementary logic.

Final Information: The final will be held Monday, May 11 from 10:00a.m-12:15 p.m. in SH 161. Except in emergency situations, you will be required to take the final exam at this time.

Homework/Participation: Most weeks there will be a homework, assigned on Monday and due the following Monday at the start of class. All homework should be typed, printed, and brought to class. During class, students will present solutions to most (if not all) of the homework problems. You are allowed to mark your paper with corrections for partial credit before turning the homework in. Every student will be required to present at least one (but likely multiple) solutions during the semester as part of the participation grade.

Written Assignments/Projects: There will be two written assignments/projects in this course. One will be a significant paper (length to be noted in the actual assignment) and will require you to do a good amount of research into the topic. Be prepared to spend time in the library and learn the ins and outs of dealing with the wide variety of resources available there. Wikipedia will not save you. The second will be a creative project, specified in the project document and presented in class.

Blackboard Use: I will be utilizing Blackboard primarily for your grades in this course. Course materials, including homework assignments will be posted to the course website, linked from the Blackboard site and noted above.

Policies

Cell Phones: Please, turn off or turn to silent any cell phones prior to getting to class. If they go off in class they are distraction not only to myself, but to everyone else in the class as well. Habitual offenders will be excused from the class with a 0 for any quizzes that day.

Computer Use: Computer use in this lab is for academic use only. If you bring a laptop with you to this class I expect you to be only using it for purposes related to this class. The same goes for the computers in this lab.

Attendance and Tardiness: Attendance is highly recommended. Missing a class not only causes you to miss the information disseminated in that lecture, but can cause you to miss important information in regards to exams and assignments and the potential of receiving a 0 for a quiz that day. I start class promptly at 9:20 and expect the students to be in class at that time. If you have circumstances that can prevent you from being in class on time, please let me know as soon as possible. Habitual offenders will be excused from the class with a 0 for any quizzes that day.

Exams and Quizzes: Exams are scheduled well ahead of time. The current schedule shows what days I believe I will be issuing an exam. Any changes to this schedule will be noted and explained in class, well ahead (approx. 1 week) of the exam affected. Exams will not be rescheduled and I will

not be offering make-up exams except under extraordinary and documented circumstances. Every class has the potential of having a quiz to reinforce the ideas from the lecture the previous class. These will not be announced ahead of time. They will be 1-3 question quizzes that can be easily done in 15 minutes either at the start or the end of the class period.

Assignments: Assignments and other outside of class work should be done on an individual basis unless otherwise specified in the description of the assignment. Assignments and other outside of class work will be taken late only under the conditions listed in the Late Policy section.

Late Policy: You are allowed 3 "slip-days" throughout the semester. This means that you may turn in an assignment/homework/project late, where each day it is late will reduce your number of slip-days by 1. So, you could turn in a project 3 days late, but then you wouldn't have any further slip-days left for the rest of the semester. Once you are out of slip-days, if you turn in the assignment late, you will earn a 0 for that assignment. As a further encouragement to turn in assignments on-time, each slip-day you have left at the end of the semester will add 0.5% to your final average. Note - you may not use slip days on quizzes or take-home exams (if any). If there are any assignments/homeworks/projects where the slip-days policy does not apply, it will be stated clearly as part of the assignment write-up.

Extra Credit: I may or may not be offering any extra credit opportunities in this class.

Final Exam: The final exam in this class is optional. You may take it if you wish in order to attempt to improve your grade. Regardless if you choose to take the final or not, every student is required to attend the final period. Failure to attend the final exam scheduled, whether or not you are intending to take the exam, will result in a 0 assessed for your final exam and factored in to your grade.

Communication: The simplest way to get in touch with me is by coming by my office during my office hours or contacting me via email. The easiest way to get in touch with me "after hours" is to send me an email or a message via slack. I habitually check my St. Mary's email account all hours of the day. If you come by my office and the door is open, feel free to stop in to chat. The open door indicates that I'm not working on anything that has to keep my undivided attention at that time so do not feel that you are interrupting me. I do make appointments if you have a certain time that you'd like to meet with me. If it fits in my schedule (meaning I'm not teaching class during that time) I will be happy to meet with you.

Academic Honesty: Academic misconduct policies are covered in the Student Code and Student Rights and Responsibilities, Article III. Pay close attention to the definitions of academic misconduct noted in Section 1. This can be found in the Student Handbook.

Disability: If you have any kind of disability that can affect your performance in this class, please let me know privately through email or stopping by my office.

Title IX and Sexual Misconduct: As stated in the St. Mary's Way, the College is a place where we strive to foster relationships based upon mutual respect, honesty, integrity, and trust. As such, we are committed to providing an educational, living, and working environment free from all forms of harassment and discrimination for all members of our community. The College prohibits all forms of sexual or gender-based harassment, discrimination or misconduct, including sexual assault, sexual harassment, relationship violence, and stalking.

If you or someone you know has experienced sexual misconduct, you may find information about resources and options on the Campus Rights webpage (www.smcm.edu/campus-rights) or by contacting the College's Title IX Coordinator, Michael Dunn (mkdunn@smcm.edu or 240-895-4105). Under College policy, faculty members are required to share any reports of sexual misconduct with Michael in order to make sure that the College is responding appropriately to address the health and safety needs of members of our community.

There are on-campus confidential resources available, including the counselors at the Wellness Center

(240-895-4289) and the Sexual Misconduct Advocacy and Resource Team student-run 24/7 hotline (301-904-2015). More information about on- and off-campus confidential resources, as well as medical treatment, law enforcement, and other support services, may be found on the Campus Rights webpage.

Schedule: The schedule for the class will be posted to the class website. The schedule is subject to change (multiple times).

Closing: The most important thing in any of my classes is that you are learning and expanding your horizons. If you are having any undue difficulty with your work as it pertains to this class, please contact me as soon as possible. Always remember that professors win when you don't need us any longer. I want you to be bouncing ideas off of each other throughout the class and it is my hope that by the end of the semester that you are driving the class session rather than me.