Math 3322 Discrete Modeling I
Professor: Dr. Joe DeMaio
Office: Mathematics and Statistics Building 223A
Phone: (770) 423-6568 **e-mail:** jdemaio@kennesaw.edu
Web Page: http://science.kennesaw.edu/~jdemaio
Required Text: Rosen, *Discrete Mathematics and its Applications, 7th Edition*

Learning Outcomes

The student will demonstrate an understanding of the basic foundation of set theory.

The student will gain an understanding of functions on discrete domains and ranges and specifically be introduced to discrete functions such as floor, ceiling and factorials.

The student will be able to construct proofs using the technique of induction.

The student will understand and apply techniques of enumeration.

The student will be able to manipulate the binomial and multinomial coefficients.

The student will demonstrate an understanding of discrete probability.

The student will be able to construct combinatorial proofs.

The student will understand and be able to manipulate the binomial theorem.

The student will demonstrate an understanding of the basic foundation of Graph Theory definitions and examples.

The student will be able to effectively communicate, in both written and oral forms, solutions and proofs on tests and to the class at the board.

Grading

There will be quizzes, tests, and a final exam. Refer to Dr. DeMaio's home page (science.kennesaw.edu/~jdemaio) for the dates and weights of these exams for the current semester. Tests will be the only item on the agenda for that day. **In every testing situation in this class, you must show all your work in order to receive credit for a problem**. The correct answer with no work will not earn full credit for a given problem. Incoherent scribbling with no cohesion will not earn full credit for a given problem. The most important part of a problem is not just the final answer but rather the method used to find the answer and communication of the material in question. Communication is an equally important part of your work! All work will be graded not only on mathematical content but on presentation and writing as well. Letter grades will be assessed on a 10-point scale. The final exam may be cumulative. Cheating will result in
the grade of an 'F' for the course!

I do not drop nor do I replace any grades! I do not give make-up tests! There are no extra credit projects! I do not make deals at the end of the semester for grades!

Homework

There will be homework problems for each section covered. This homework will not be taken up and graded. It is to give you a point of reference from which to work. Test problems are often slight variations of homework problems if not the exact problem. The only way to succeed in this class is by doing all of the assigned homework! Merely, attending class will not be enough. A student will encounter a large number of techniques and examples in this course. It is vital to know and understand these new concepts. Successive lectures will assume the knowledge of previously stated techniques and examples. One must keep up with this material on a day-to-day basis! Because homework problems are not graded, you are allowed and strongly encouraged to work together on homework problems. I believe that it is very beneficial to regularly work problems in small groups of two to four people. This will decrease your chances of getting stuck on a problem and give you someone, other than your instructor, with whom to discuss homework problems. Obviously however, you must also be able to work problems without guidance for testing situations and when presenting at the board.

Homework is mandatory despite the fact that there is no homework grade!

Attendance

Every mathematics class is a building process from day one (actually, even from grade one). A student who misses classes has seriously compromised his or her knowledge of the material and will begin to feel an effect on their final grade. Attendance and class participation are important elements to incorporate into your study habits. I will distribute a sign-in sheet to document attendance at the beginning of each class. During the summer term I may, from time to time, distribute a second sign-in sheet after the break. Signing for another student will be treated as an honor code violation.

A student who misses a class is responsible for all material missed. Due to time constraints your instructor cannot re-present the lecture in a one-on-one setting. If circumstances dictate that a student will miss numerous class meetings, perhaps now is not the semester to take this course.

Attendance is mandatory despite the fact that there is no attendance grade!

Grades

I do not report grades to students over the phone or through e-mail. I will not give your test to a friend. You must come to class or my office to pick up a test.