Math 4322
Discrete Modeling II
Professor: Dr. Joe DeMaio
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Required Texts: Rosen, *Discrete Mathematics and its Applications, 6th Edition*

Learning Outcomes

The student will apply techniques of enumeration from DM I.
The student will demonstrate an understanding of intermediate combinatorics as introduced in DM II.
The student will demonstrate an understanding of the basic foundation of Graph Theory definitions and examples.
The student will understand the isomorphism problem in a graph theoretic setting.
The student will demonstrate an understanding of connectivity of a graph, especially as applied to Eulerian circuits and Hamiltonian cycles.
The student will model The Knight's Tour problem using graphs.
The student will demonstrate an understanding of domination in graphs.
The student will model domination of a chessboard using graphs.
The student will model the *n*-Queens problem using graphs.
The student will demonstrate an understanding of the graph coloring problem.
The student will demonstrate an understanding of Trees in graph theory.

Grading

There will be quizzes, tests, and a final exam. Quizzes will be given at the end of class following the lecture. Tests will be the only item on the agenda for that day. See Dr. DeMaio's homepage at http://science.kennesaw.edu/~jdemaio/ for dates and weights of these exams for the current semester. **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!

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.

While there is no homework grade, your instructor will feel no compulsion to go out of his way for a student who does not diligently work on assigned Problems.

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.

While there is no attendance grade, your instructor will feel no compulsion to go out of his way for a student who has a poor attendance record.

Final Grade
At the end of the semester, for reasons of privacy, I do not post grades. I also do not report grades to students over the phone or through e-mail. You are, of course, more than welcome to come to my office and see your final exam.