Quantitative Reasoning: Probability, Statistics, and Decision Making
Syllabus: Spring, 2003
Tuesday & Thursday 11:00am – 12:15pm

Instructor: Eileen Rodriguez
Office: 727 Warren Weaver Hall
E-mail: rodrigue@cims.nyu.edu
Phone: (212) 998-3187

Course Description: This course will examine various topics with applications in economics and the natural sciences. In particular, the concepts and language of probability and statistics will be introduced. The uncertainty of events will be described through probability. Also, we will develop tools that will be used as a foundation to explore the application of mathematical approaches to economics, especially the use of game theory and its related techniques. The course will develop mathematical ideas that can help to make rational choices in the decision-making process.

Text: For All Practical Purposes: Mathematical Literacy in Today's World, 6th Edition, by COMAP (Consortium for Mathematics and It's Applications), published by W.H. Freeman and Company.

Grading:

Homework: Practicing what has been covered in class is essential to learning mathematics. You are responsible for completing all homework assignments on time and raising related questions in class. Homework will be assigned weekly.

Exams: There will be one midterm, several quizzes, and one cumulative final

Final Exam: 5/8 10:00am – 11:50am

Grade Composition: Participation: 10% Midterm: 30% Final Exam: 30% Quizzes: 30%

Course Outline:

Week	Days	Topic Discussed in Class	Reading
Week 1	1/21; 1/23	Overview & Introduction to Statistics	Chapter 5
Week 2	1/28; 1/30	Introduction to Statistics	Chapter 5
Week 3	2/4 2/6	Exploring Data **No Class**	Chapter 6
Week 4	2/11 2/13	Exploring Data Probability	Chapter 6 Chapter 7
Week 5	2/18; 2/20	Probability	Chapter 7
Week 6	2/25 2/27	Probability Review for Midterm	Chapter 7
Week 7	3/4 3/6	**Midterm Exam** Statistical Inference	 Chapter 8
Week 8	3/11	Statistical Inference	Chapter 8
Week 9	3/18; 3/20	**Spring Break**	
Week 10	3/25; 3/27	Social Choice	Chapter 11
Week 11	4/1; 4/3	Weighted Voting	Chapter 12
Week 12	4/8; 4/10	Fair Division	Chapter 13
Week 13	4/15; 4/17	Apportionment	Chapter 14
Week 14	4/22 4/24	Apportionment Game Theory	Chapter 14 Chapter 15
Week 15	4/29 5/1	Game Theory Wrap up and review for the final	Chapter 15