George Mason University
Math 110-002
Course Syllabus

Term   Fall 2021
Title   Probability
Course   Math 110-002
Location   Horizon room 5018
Time   Mon and Wed noon - 01:15
Professor: Douglas Eckley
                deckley2@gmu.edu
                mobile #   571 277 7927 (use sparingly)
                office location Exploratory Hall room 4451 (on 4th floor)
                office #   703 993 1682
                office hours   MW 10:30 – 11:30 and W 1:30 – 5:30

Description

This course meets the quantitative reasoning requirement, one of the Foundation requirements of the University General Education program. The goal of the Foundation requirement is to help ensure that students are equipped with the tools and techniques necessary to succeed in college and throughout their lives and careers.

The learning objectives for this requirement are:

1. Students are able to interpret quantitative information (i.e., formulas, graphs, tables, models, and schematics) and draw inferences from them.

2. Given a quantitative problem, students are able to formulate the problem quantitatively and use appropriate arithmetical, algebraic, and/or statistical methods to solve the problem.

3. Students are able to evaluate logical arguments using quantitative reasoning.

4. Students are able to communicate and present quantitative results effectively.

To help achieve these objectives, we will learn to use Excel spreadsheets.

We will cover the following topics:

    Introduction to Excel
    Graphs (especially xy graphs)
    Matrices
    Linear Equations
   Combinations and Permutations
    Probability

Mathematics of Loans (Car, Home)
Mathematics of Retirement Saving
Craps, Simulation
Encryption

The book is Finite Mathematics and Its Applications, Eleventh or later edition, by Goldstein, Schneider and Siegel, Pearson 2014. The lectures are done my way (not from the book). The book serves as a useful source of practice problems and as a back-up resource. The idea is that you have two perspectives on learning the material: mine and the authors'.

Procedures

In this course, you must become hands-on with Microsoft Excel.

The class will consist mostly of a series of lectures. I will demonstrate calculations via spreadsheet, visible on the whiteboard.

Grading will be divided as follows:

Progress exams (5)   70
Final exam   20
Group Assignments (2)   10

The progress exams will be worth 15 marks, except #5 which will be 10 marks.
I will grade on a curve at the end of the semester. The curve will be no more harsh than 90/80/70/60.

Attendance

I do not take attendance, but I am in the habit of giving graded pop quizzes when I notice empty seats. Those give you a chance for marks that you missed on a progress exam.

Calendar

Date   Topic

23-Aug   Introduction to Excel
25-Aug   Growing Money
30-Aug   Linear Algebra, Graphs
01-Sep   Group Assignment #1
06-Sep   NO CLASS (Labor Day)
08-Sep   Progress Exam 1
13-Sep   Intro to Matrices
15-Sep   Matrices in Excel
20-Sep   Simultaneous Linear Equations
22-Sep   Set Theory

27-Sep	Review
29-Sep	Progress Exam 2
04-Oct	Probability
06-Oct	Probability
12-Oct	Expectation
13-Oct	Expectation
18-Oct	Permutations and Combinations
20-Oct	Permutations and Combinations
25-Oct	Progress Exam 3
27-Oct	Math of Loans
01-Nov	Math of Loans
03-Nov	Intro to Stock Market
08-Nov	Retirement Saving
10-Nov	Retirement Saving
15-Nov	Progress Exam 4
17-Nov	Simulation
22-Nov	Encryption
24-Nov	NO CLASS (Thanksgiving)
29-Nov	Group Assignment #2
01-Dec	Progress Exam 5 (a 10-mark exam)
06-Dec	Reading Day
13-Dec	Final Exam 10:30am – 1:15pm