MTH 107

Introduction to Finite Mathematics

Instructor: Francine Clark, 401-608-6221, email: fclark.writer@juno.com
Office Hours: By appointment

Text: D. Datta, *Finite Math for Liberal Arts,* Third Edition
Calculator: Required
Cell Phones: Must be turned off during class
Prerequisite: Basic arithmetic

Topics include statistics, set theory, counting techniques, and probability. The primary goal is to develop an appreciation for mathematics in everyday events. Wherever possible, examples will be given from daily life, current events, etc. Students will be directed to various websites as reference.

Doing well in this course requires some effort on your part: Come to class, read the book, review your notes, do the homework problems, and *ask questions*. The exams will be based on homework problems. Don't be concerned if you don't understand everything. We will devote some class time to addressing any problems you might have and you can feel free to call me, email me, or arrange for time outside of class. There should be no excuse for not clearing up any problems you might have. This class is intended to be enjoyable, not tedious.

Grading and Attendance:

- Three one hour exams: 100 points each

- One mandatory computer project: 100 points

- Attendance: 100 points (see explanation, below)

Attendance is a critical part of your grade. A *documented* absence is one with prior notification or due to a weather emergency. After the fact, a medical or legal document, mechanic's bill, or evidence of a personal or family emergency will suffice. If you know that you will be absent for a legitimate reason, email me about it in advance. **You are allowed 3 *un*documented absences without penalty**. The fourth and additional undocumented absences will result in a loss of 10 points per absence from your 100-point attendance credit, i.e., you may lose up to 20% of your grade through nonattendance.

Homework problems will be assigned on a regular basis and students are encouraged to work together on these. Working together on the computer assignment is prohibited.

NOTE: Students who require accommodations and who have documentation from Disability Services (874-2098) should make arrangements with me as soon as possible.

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Spring 2008

Homework Assignments
Text: Finite Math for Liberal Arts, Third Edition
Author: Dilip Datta

Section	**Page**	**Problems**
Chapter 1: Organization and Display of Data		
1.1	5	3, 4, 6
1.2	9	1, 3, 4, 5
1.3	14	1, 2, 4, 8
1.5	22	3, 4, 6, 7
1.6	25	1, 3, 6
Chapter 2: Analysis of Data		
2.1	38	2, 6
2.2	44	1, 2
2.3	48	2, 3, 7, 8
2.4	56	1, 2, 4, 6, 8
Chapter 3: Set Theory		
3.1	73	2, 3, 7
3.2	78	3, 5, 6
3.3	81	1, 4, 5, 6, 9
3.4	85	1, 2, 3, 7
3.5	87	1, 3, 4
Chapter 5: Probability Theory		
5.1	115	2, 5, 6
5.2	118	1-4, 6, 10
5.3	122	1, 2, 6, 8, 11
5.4	127	1, 2, 4, 6

The following will be covered if time permits:

6.1	150	1, 2, 4
4.2	101	2-5, 7
4.3	105	1, 5-7
4.4	109	1-7

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Computer Project

Excel Instructions

1. Open an Excel Worksheet

2. In cell A1, enter a title for the data you collected, e.g., Hours, Days per Week, Score, Length

3. Starting in cell A2, enter the raw data in column A, one value in each cell.

4. In the next cell in column A, after you have entered all your data, type Mode. In the next cell in column A, type Median. Continue in column A and type Mean, Variance, and Standard Deviation.

   As an example, if all your data ends in cell A24, type Mode in cell A25, Median in A26, Mean in A27, etc.

5. In column B, next to the word Mode, you will be entering a formula that will calculate the mode. Click on that cell, and on the Insert menu, choose Function. A box will appear that will allow you to indicate a category. Select "Statistical." You will then see a list of functions to choose from. Scroll down the list until you see "Mode." Click on Mode and then click "OK." For our example, in the box that appears, next to Number 1, enter A2:A24. This indicates that the values whose mode you are determining appear in column A, cells 2 through 24. The mode will appear in cell B25.

Hours					
4					
5					
8					
10					
12					
4					
3					
5					
9					
12					
0					
2					
8					
6					
12					
15					
3					
4					
1					
16					
12					
9					
10					
Mode	12				
Median	8				
Mean	7				
Variance	20				
Stand Dev	5				

6. Click on the cell in column B next to the word Median. Follow the instructions above, starting at "Click on that cell and on the Insert menu, choose Function." This time you will choose Median from the list and enter the same range of cells. Once you click on "OK," the median value should appear in cell B26, in this example.

7. Continue in this way for the Mean, Variance, and Standard Deviation. For Mean, choose the AVERAGE function, for Variance, choose VAR, and for Standard Deviation, choose STDEV. Most likely, a value with a number of decimal places will appear in these cells. You're going to use Excel to round off to 0 decimal places. To do this, click on the cell with the number in it; on the Format menu choose "Cell." Under "Category," select Number and enter 0 in the box for Decimal Places. Then click "OK."

Computer Project

1. Develop a study in which you collect *quantitative* data using one of the following techniques:
   - Questionnaire
   - Survey
   - Research
   - Interview

   (Note: Collect at least 20 items of data and no more than 50.)

   Include a description of the technique you used, how you collected the data, and the people you collected data from.

2. Enter the raw data in an Excel Worksheet and use Excel to determine the following:
   - Mode
   - Median
   - Mean
   - Variance
   - Standard Deviation

4. Analyze the data and formulate at least three conclusions. Include a description of how the conclusions are supported by the data.