Introduction

Lecture 1

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Hampden-Sydney College

Wed, Aug 27, 2008

Outline

Introduction

- Dr. Robb T. Koether
- Office: Bagby 114
- Office phone: 223-6207 (9:00 am - 5:00 pm)
- Home phone: 392-8604 (6:00 pm - 11:00 pm)
- e-mail: rkoether@hsc.edu
- Office hours: MWF 1:30 - 3:20, T 1:30 - 2:20; other hour by appointment.

Introduction

- Meeting time: MWF 8:30; T 2:30.
- Meeting place: Bagby 022.
- Text: Interactive Statistics, 3rd ed., by Martha Aliaga and Brenda Gunderson.

Homework

- Daily assignments.
  - Read the section.
  - Read the examples and work through them yourself.
  - Do the “Let’s Do It!” exercises.
  - Do the assigned exercises at the end of the section.
- Do the homework every night; do not put it off.

Homework

- If you are not able to work all the problems, then you need to seek help.
- Departmental tutors will be available Sunday through Thursday nights, 8:00 - 11:00, in Bagby 111, starting next week.

Quizzes

- There will be a quiz every Tuesday during the first 10 minutes of class.
- The quiz questions will be taken verbatim from the previous week's homework.
- I will drop the two lowest quiz grades.

Quizzes

- The first quiz will be next Tuesday.
- It will be a quiz on the content of the syllabus.

Tests

- There will be three tests

Test	Date	Chapters
#1	Fri, Sep 26	1 - 4
#2	Fri, Oct 24	5 - 8
#3	Fri, Nov 21	9 - 11

Final Exam

- The final exam will be given on Wed, Dec 17, at 9:00 a.m. in Bagby 022.
- It will be cumulative, covering chapters 1 - 11, 13, 14.

Final Grade

- Final grade in the course is a weighted average of the quiz average, the test average, and the final exam grade.

Component	Weight
Quiz avg.	30%
Test avg.	50%
Final exam	20%

Attendance Policy

- I will check attendance every day.
- If you arrive after the bell, it is your responsibility to tell me after class that you arrived late.
- Based on your attendance, I will take the following actions.

No. of Absences	Action
0 - 2	Raise final grade one part
3 - 5	No action
6 - 8	Lower final grade one part
8	Issue final warning letter
> 8	Withdraw you with WF

A Statistical Problem

A Statistical Problem

- The Mars candy company advertises that the distribution of colors in plain M&Ms candy is

Color	Proportion
Blue	24%
Orange	20%
Green	16%
Yellow	14%
Brown	13%
Red	13%

- How can we tell if the distribution of colors in a package of M&M's agrees with what the company advertises?

A Problem

- The naive answer is to count the colors and see whether they match the advertised proportions.
- What is wrong with that approach?

A Problem

- We must make an allowance for randomness in packaging.
- Does that mean that the observed distribution could be anything at all?
- What is wrong with that approach?

A Problem

- We expect the observed distribution to be close to, but not exactly the same as, the advertised distribution.
- How close is close enough?
- That's a VERY good question.
- In fact, that is the FUNDAMENTAL question in statistics.

A Problem

- I will open three bags of plain M&Ms and count the colors.
- Then I will do a calculation that will be explained in Chapter 13.
- My calculation will measure how close the observed distribution is to the Mars Company's claim.
- The closer the calculation is to 0, the better the match.

A Problem

- Statistical theory says that if the Mars Company's figures are correct, then the number that I calculate
  - Should be around 5.
  - Should not be more than 11.07.
- If my calculation produces a value greater than 11.07, then the deviation is too large.

Assignment

- Read the syllabus carefully.
- Read Sections 1.1 - 1.2, pages 1 - 4.