# MATH 460: Probability & Statistics — September 2018

# Chapter 5: Sampling Theory & Chapter 2: Probability Distribution Functions

## In-Class Activity #3 — Dr. Basilio

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## Chapter 5: Sampling Theory

### Measurements of Central Tendency

### Measurement of Dispersion

### Activity 1: Standard Deviation

Let $S = \{123, 100, 111, 124, 132, 154, 132, 160\}$ be our data set. Find:

(a) Mean, Median, and Mode

(b) Standard Deviation

(c) What does the standard deviation mean in this case?

### Activity 2: Five-Number-Summary

(a) Find the five number summary, and draw a Box-Whisker plot for $S = \{42, 20, 31, 10, 5, 3, 2, 1, 67, 53, 44\}$.

(b) Find the standard deviation for the set from problem 4.

# Chapter 2: Random Variables

## Discrete vs Continuous Variables

# Chapter 4: Probability Distribution Functions

## Binomial Distribution

### Activity 3: Binomial-Distribution-Probability

A die is tossed 3 times. What is the probability of

(a) No fives turning up?

(b) 1 five turning up?

(c) 3 fives turning up?

### Activity 4: Binomcdf-probability

What is the probability of at least four successful trials in a random experiment, with probability of success of a single trial being 25%?

### Activity 5: Binomial-Distribution-Probability

Find the probability that in tossing a fair coin three times, there will appear

(a) three heads

(b) two tails and a head

(c) at least one head

(d) not more than one tail

### Activity 6: Binomial-Distribution-Probability

Find the probability that in five tosses of a fair die, a 3 will appear

(a) twice

(b) at most once

(c) at least two times