

# STA 371G Outline

## Spring 2015

**Instructor:** Mingyuan Zhou, Ph.D., Assistant Professor of Statistics

Office: CBA 6.462

Phone: 512-232-6763

Email: mingyuan.zhou@mcombs.utexas.edu

Office Hours: Monday Wednesday 5:00-6:30 PM. You are welcome to come by my office at other times.

### Wednesday, January 21

#### Topics:

- Introduction
- Probability
- Random variables
- Probability distributions
- Mean, variance and standard deviation of a random variable

### Monday, January 26

#### Topics:

- Add a constant to a random variable
- Multiply a random variable by a constant
- Conditional, joint and marginal probabilities
- Independent random variables, sum of independent random variables
- Continuous random variables
- Probability density function: area under the curve represents probability
- Standard normal distribution  $Z \sim \mathcal{N}(0, 1)$
- Standard normal calculations in Excel: NORMSDIST,  
or in R: pnorm (type “?pnorm” in R for help).

#### Reading Assignments:

If you are not familiar with the topics discussed in class, you are recommended to read:  
pp. 156-168, 189-195, of Data analysis and decision making, 4th edition  
or

pp. 196-206, 225-231 of Data analysis and decision making, 3rd edition

To learn more about these topics, you may further read:

Chapters 2.1, 2.2, 2.4, and 2.5 of OpenIntro Statistics, 2nd edition