



Introduction to statistical concepts (Part II)

Dr. Yan Liu

Department of Biomedical, Industrial and Human Factors Engineering
Wright State University

Probability Concepts and Terms

■ Statistical Experiment

- A process that generates a set of results or outcomes, each with some possibility of occurring

■ Sample Point

- Each of the possible outcomes of the statistical experiment

■ Sample Space, S

- The set of all possible outcomes of the statistical experiment

□ Discrete sample space

- A sample space that contains a finite number or a countable set

- e.g. the outcomes of dice rolls, drawings from a bag of balls with different colors

□ Continuous sample space

- A sample space that contains an infinite and uncountable set of sample points

- e.g. the outcomes of temperature readings, height measurements, and salaries

Probability Concepts and Terms

■ Event

- A subset of a sample space
- May contain some, all, or none of the outcomes (sample points) comprising the sample space
- Simple event
 - Event that contains only one sample point
- Compound event
 - Event that contains two or more sample points
- Null space
 - Event that contains no sample points, denoted as \emptyset