

**EE 497B**

**Probability and Random Processes  
for Electrical Engineers**

**Lecture 10**

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# Lecture 10 Topics

- Independent Trials
- Reliability Engineering

# Bernoulli Trials and the Binomial Experiment

- **Definition:** A series of experiments (trials) are *independent* if the outcome of one experiment has no effect on the outcome of any other experiment (trial)
- **Definition:** A *Bernoulli trial* is an experiment whose outcome is random and can be either of two possible outcomes, “success” and “failure”
- **Definition:** A *Binomial experiment* consists of  $n$  independent Bernoulli trials, where the probability of a success,  $p$ , is constant from trial to trial