| STAT324: Introductory Applied Statistics for Engineers | Spring 2019 |
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## Chapter 1 — Introduction Summary

1. What is Statistics?

   - Statistics is the science of converting data into knowledge.
   - Statistics is "learning in the presense of variation. " (Wardrop)

2. Populations and Samples

   - A **population** is any well-defined collection of things.
   - A **sample** is any subset of a population.

3. Types of Statistics

   - Descriptive statistics: Summarizing data either graphically or numerically.
   - Inferential statistics: Using a sample to make statements (infer) about the properties of a population.
     - Estimation
     - Testing
     - Fitting models

4. Types of Data

   - Numerical: Data that consists of numbers.
     - Continuous: Any value in a specified range is possible. (measurements)
     - Discrete: Only certain specific values are possible. ( for example, counts)
   - Categorial: Data that is not numbers.
     - Nominal: No natural order.
     - Ordinal: A natural order exists, but no associated numbers.