

**Davenport University**  
**Department of Computer Information Science**

1. STAT220, Introduction to Statistics
2. 3 credits
3. Course coordinator: Tim Pennings/Gabriela Ziegler
4. Textbook  
**9781259345296**  
Elementary Statistics with CDROM and Formula Card  
Navidi, William & Monk, Barry  
2nd 2016 / McGraw-Hill
5. Specific course information
  - a. Catalog description: This course introduces students to statistical methods common to professional careers. Students learn how to use the collection, analysis, presentation and interpretation of data. Students will learn to use graphical and numerical methods to summarize data sets. Analysis of large, real-world data sets will be performed using statistical software.
  - b. Prerequisites: MATH125
  - c. Required course
6. a. Course Learning Outcomes:
  1. Analyze a data set using graphic and numeric descriptive methods.
  2. Compare data sets using appropriate graphic and numeric measures.
  3. Use simple linear regression and correlation to study the relationship between two quantitative variables.
  4. Design, perform, and interpret the results of basic hypothesis tests.
  5. Construct appropriate confidence intervals and interpret the results.
  6. Use discrete and continuous probability distributions for modeling and inference.
  7. Understand the effect of sampling size and technique on statistical inference.
  8. Apply Minitab and other software as appropriate to the course content.
- b. Student Outcomes assessed by STAT220
  1. To analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
- c. Mapping of Course Learning Outcomes to Student Outcomes

Course Learning Outcomes 2 → ABET SO 1

7 Course Content:

Topic or Subtopic (Number of hours devoted to a topic are shown in parenthesis)

1. Sampling, Types of Data, Design of Experiments, Bias in Studies (3)
2. Graphical Summaries of Qualitative Data, Frequency Distribution and Graphs (3)
3. Measures of Center, Spread, Position (6)
4. Correlation, The Least-Squares Regression Line, Features and Limitations of Least-Squares Regression Line (3)
5. Probability, The Addition Rule and The Rule of Complements, Conditional Probability and Multiplication Rule (6)
6. Random Variables, The Binomial Distribution, The Poisson Distribution (3)
7. The Standard Normal Curve, Applications of the Normal Distributions, Sampling Distributions and the Central Limit Theorem, The Central Limit Theorem for Proportions, The Normal Approximation to Binomial (6)
8. Confidence Intervals for Population Mean, Std. Deviation Known, Confidence Intervals for Population Mean, Std. Deviation unknown, Confidence Intervals for Population Proportion (6)
9. Principles of Hypothesis Testing (6)