Course Description: This course aims to help you make sense of data— which are everywhere! It will empower you to make good decisions as consumers and citizens, and hopefully give you the critical thinking skills to think about the world rationally. Here are your learning outcomes:

1. Explain the use of data collection and statistics as tools to reach reasonable conclusions.
2. Recognize, examine and interpret the basic principles of describing and presenting data.
3. Examine, analyze and compare various sampling distributions for both discrete and continuous random variables.
4. Describe and compute confidence intervals.
5. Solve linear regression and correlation problems.
6. Perform hypothesis testing using statistical methods.

Course Evaluation:

Average of 3 Quizzes 10%
Average of 3 Tests 60%
Final Examination (comprehensive) 30%

I give partial credit wherever possible, especially when I can read it (!) Most answers need to be supported by some work.

I will keep a daily record of attendance once at the beginning of class, and I will be required to share this, as well as missed or low grades, with the university when they ask for a list of students in danger of failing. If you come in late and would like credit for attendance, please notify me at the end of class. I will reward good attendance (2 or fewer missed classes) with 1 average point at the end of the semester.

Homework will be assigned, but it will not be graded. We will begin each class with a Q&A session about the homework, and you can expect that quizzes and tests will be very similar to homework problems. Makeup tests will not be given, except for official university reasons. If you miss a test for another reason that grade will be a 0 until you take the final exam. I will substitute the final exam grade for the lowest test grade. I do this for everyone, so it is to your advantage to take all three tests. Everyone takes the final exam. No early finals will be given.


ISBN 9781119682202

You will need a basic calculator on much of our work—it does not need to have much more than the 4 functions and maybe a square root button. There will be no extra credit or special assignments for any reason. In addition to my office hours, here are other resources available to you:
Supplemental Instruction (SI):  [http://www.uttyler.edu/si/includes/sub-nav.php](http://www.uttyler.edu/si/includes/sub-nav.php)

Math Learning Center (MLC):  RBN 4021. This offers free drop-in homework help.

PASS Center:  LIB 401. Free individual tutoring appointments [https://www.uttyler.edu/tutoring](https://www.uttyler.edu/tutoring)

Cell phone policy:  Please set your cell phones to silent mode.  If you are expecting an emergency call, please notify me in advance of class, sit near the door, and answer the call outside of the classroom.

Jan. 29 is our Census Day, the last day to withdraw without penalty.  Please check out this link for university syllabus policies:  [http://www.uttyler.edu/academicaffairs/files/syllabuspolicy.pdf](http://www.uttyler.edu/academicaffairs/files/syllabuspolicy.pdf)

Here is an approximate syllabus for our class:

**Spring 2024 – Math. 1342.009 – Nan Bailey**

**Tuesday and Thursday 2 – 3:20 pm, RBN 4027**

- **Tuesday Jan. 16**  Introduction and 1.1 The Structure of Data
- **Thursday Jan. 18**  1.2 Sampling from a Population
- **Tuesday Jan. 23**  1.3 Experiments and Observational Studies
- **Thursday Jan. 25**  2.1 Categorical Variables
- **Tuesday Jan. 30**  2.2 One Quantitative Variable: Shape and Center, **Quiz 1**
- **Thursday Feb. 1**  2.3 One Quantitative Variable: Measures of Spread
- **Tuesday Feb. 6**  2.4 Boxplots and Quantitative/Categorical Relationships

**Thursday Feb. 8** **Test 1**

- **Tuesday Feb. 13**  2.5 Two Quantitative Variables: Scatterplot and Correlation
- **Thursday Feb. 15**  2.6 Two Quantitative Variables: Linear Regression
- **Tuesday Feb. 20**  2.7 Data Visualization and Multiple Variables
- **Thursday Feb. 22**  3.1 Sampling Distributions, **Quiz 2**
- **Tuesday Feb. 27**  3.2 Understanding and Interpreting Confidence Intervals
- **Thursday Feb. 29**  3.3 Constructing Bootstrap Confidence Intervals
- **Tuesday March 5**  3.4 Bootstrap Confidence Intervals Using Percentiles

**Thursday March 7** **Test 2**

- **March 11-15** Spring Break
- **Tuesday March 19**  4.1 Introducing Hypothesis Tests
- **Thursday March 21**  4.2 Measuring Evidence with P-Values
- **Tuesday March 26**  4.3 Determining Statistical Significance
- **Thursday March 28**  4.4 A Closer Look at Testing, **Quiz 3**
- **Tuesday April 2**  4.5 Making Connections
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>Thursday April 4</td>
<td>5.1 Hypothesis Tests Using Normal Distributions</td>
</tr>
<tr>
<td>Tuesday April 9</td>
<td>5.2 Confidence Intervals Using Normal Distributions</td>
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<tr>
<td>Thursday April 11</td>
<td><strong>Test 3</strong></td>
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<tr>
<td>Tuesday April 16</td>
<td>6.1 Inference for a Proportion</td>
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<tr>
<td>Thursday April 18</td>
<td>6.2 Inference for a Mean</td>
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<tr>
<td>Tuesday April 23</td>
<td>6.3 Inference for a Difference in Proportions</td>
</tr>
<tr>
<td>Thursday April 25</td>
<td>6.4 Inference for a Difference in Means</td>
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*Tuesday April 30, 2 – 4 pm, Final Exam*