



# On-Campus Course Syllabus

## STA 201 L1

### Introduction to Statistics

### Fall 2020

#### Class Information

**Day and Time:** Mondays 7:30pm – 10:00pm

**Room Number:** E209

#### Contact Information

**Instructor Name:** Dr. Brandon Seitzler

**Instructor Email:** bseitzler@criswell.edu

**Instructor Phone:** 214.818.1309

**Instructor Office Hours:** Tuesdays, 10am to 2pm

#### Course Description and Prerequisites

An introductory course covering data collection, analysis, presentation, and interpretation of data and probability. Topics include descriptive statistics, estimation, confidence intervals, hypothesis testing, and correlation and regression. (Prerequisite: MTH 101) (This course satisfies for a Math/ Natural Science course.)

#### Course Objectives

At the end of this course, the student should be able to:

1. Define and summarize research design and data collection principles and concepts.
2. Create and interpret graphical data summaries.
3. Calculate and interpret summary statistics.
4. Calculate probabilities.
5. Perform hypothesis tests.

Adam Smith reminds us that when we were born none of us could do statistics. When you feel lost this semester find solace in Smith's words. What you are experiencing is normal:

*"The difference of natural talents in different men is, in reality, much less than we are aware of; and the very different genius which appears to distinguish men of different professions, when grown up to maturity, is not upon many occasions so much the cause, as the effect of the division of labour. The difference between the most dissimilar characters, between a philosopher and a common street porter, for example, seems to arise not so much from nature, as from habit, custom, and education. When they came into the world, and for the first six or eight years of their existence, they were, perhaps, very much alike, and neither their parents nor playfellows could perceive any remarkable difference. About that age, or soon after, they come to be employed in very different occupations. The difference of talents comes then to be taken notice of, and widens by degrees, till at last the vanity of the philosopher is willing to acknowledge scarce any resemblance."*

Adam Smith, *The Wealth of Nations* (New York: The Modern Library, 1965), 15-16.

## Required Textbooks

- Salkind, Neil J. and Leslie A. Shaw. Statistics for People Who (Think They) Hate Statistics Using R. Sage. ISBN: 978-1-5443-2457-9.

## Course Requirements and Assignments

- **Reading quizzes on Canvas (40%)** – Each week students will complete the chapter review quiz for that week's reading(s). These quizzes are available on Canvas. These quizzes may be completed until the time of class (7:30pm) each week. **No late quizzes may be submitted.** You are allowed unlimited attempts at each quiz. Correct answers will be displayed Mondays at 7:30pm.
- **Midterm Exam (30%)**
- **Final Exam (30%)**
- Additional quizzes and assignments will not count toward your final grade.

## Recommended Reading

- [www.economist.com](http://www.economist.com) - Stop reading whatever click-bait, infotainment news sources your friends and family link to on Facebook. The Economist goes to press once per week. This means that you are able to stay current on what is going on in the world but without the daily (or hourly) urgency created by daily newspapers and the 24-hour news cycle. By reading a weekly newspaper that is global in perspective you are able to step back and see what is going on in the world with a more complete and reasonable perspective. You can get a discounted student subscription to The Economist magazine. The digital subscription includes an audio version of each week's edition.
- If you find yourself struggling in this course, a great supplement to readings, lectures and office hours is the Khan Academy. There is an entire video series on statistics at [www.khanacademy.org](http://www.khanacademy.org)

## Course/Classroom Policies and Information

- You may not have your cell phone anywhere in sight during class.
- The one exception to my cell phone rule is using your cell phone as a calculator or to look something up online as a part of class participation. Other than these two exceptions, phones belong in bags.
- You may not use your laptop during class for anything other than class-related activities.

## Class Attendance

Students are responsible for enrolling in courses for which they anticipate being able to attend every class session on the day and time appearing on course schedules, and then making every effort to do so. When unavoidable situations result in absence or tardiness, students are responsible for acquiring any information missed. Instructors are not obliged to allow students to make up missed work. Per their independent discretion, individual instructors may determine how attendance affects students' ability to meet course learning objectives and whether attendance affects course grades.

## Grading Scale

			Grade Definitions
A	93-100	4.0 grade points per semester hour	Exceptional
A-	90-92	3.7 grade points per semester hour	
B+	87-89	3.3 grade points per semester hour	
B	83-86	3.0 grade points per semester hour	Above Average
B-	80-82	2.7 grade points per semester hour	
C+	77-79	2.3 grade points per semester hour	
C	73-76	2.0 grade points per semester hour	Average
C-	70-72	1.7 grade points per semester hour	
D+	67-69	1.3 grade points per semester hour	
D	63-66	1.0 grade point per semester hour	Below Average
D-	60-62	0.7 grade points per semester hour	
F	0-59	0.0 grade points per semester hour	Unacceptable

## Incomplete Grades

Students requesting a grade of Incomplete (I) must understand that incomplete grades may be given only upon approval of the faculty member involved. An "I" may be assigned only when a student is currently passing a course and in situations involving extended illness, serious injury, death in the family, or employment or government reassignment, not student neglect.

Students are responsible for contacting their instructors prior to the end of the semester, plus filing the appropriate completed and approved academic request form with the Registrar's Office. The "I" must be removed (by completing the remaining course requirements) no later than 60 calendar days after the close of the term or semester in which the grade was awarded, or the "I" will become an "F."

## Academic Honesty

Absolute truth is an essential belief and basis of behavior for those who believe in a God who cannot lie and forbids falsehood. Academic honesty is the application of the principle of truth in the classroom setting.

Academic honesty includes the basic premise that all work submitted by students must be their own and any ideas derived or copied from elsewhere must be carefully documented.

Academic dishonesty includes, but is not limited to:

- cheating of any kind,
- submitting, without proper approval, work originally prepared by the student for another course,
- plagiarism, which is the submitting of work prepared by someone else as if it were his own, and
- failing to credit sources properly in written work.

## Institutional Assessment

Material submitted by students in this course may be used for assessment of the college's academic programs. Since programmatic and institutional assessment is done without reference to specific students, the results of these assessments have no effect on a student's course grade or academic standing at the college. Before

submitting a student's work for this type of assessment, the course instructor redacts the work to remove anything that identifies the student.

## **Institutional Email Policy**

All official college email communications to students enrolled in this course will be sent exclusively to students' institutional email accounts. Students are expected to check their student email accounts regularly and to respond in an appropriate and timely manner to all communications from faculty and administrative departments.

Students are permitted to setup automatic forwarding of emails from their student email accounts to one or more personal email accounts. The student is responsible to setup and maintain email forwarding without assistance from college staff. If a student chooses to use this forwarding option, he/she will continue to be responsible for responding appropriately to all communications from faculty and administrative departments of the college. Criswell College bears no responsibility for the use of emails that have been forwarded from student email accounts to other email accounts.

## **Disabilities**

Criswell College recognizes and supports the standards set forth in Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990, and similar state laws, which are designed to eliminate discrimination against qualified individuals with disabilities. Criswell College is committed to making reasonable accommodations for qualifying students, faculty, and employees with disabilities as required by applicable laws. For more information, please contact the Student Services Office.

## **Intellectual Property Rights**

Unless otherwise specifically instructed in writing by the instructor, students must neither materially nor digitally reproduce materials from any course offered by Criswell College for or with the significant possibility of distribution.

## **Resources and Supports**

Canvas and SONIS: Criswell College uses Canvas as its web-based learning tool and SONIS for student data. Students needing assistance with Canvas should contact the Canvas Help Support line at (844) 358-6140. Tech support is available at this number, twenty-four hours a day. Students needing help with SONIS should contact the Campus Software Manager at [studenttechsupport@criswell.edu](mailto:studenttechsupport@criswell.edu).

Student Services: The Student Services Office exists to foster and encourage success in all areas of life—physical, intellectual, spiritual, social, and emotional. Students are encouraged to reach out for assistance by contacting the office at 214.818.1332 or [studentservices@criswell.edu](mailto:studentservices@criswell.edu). Pastoral and certified counseling services are also available to Criswell students. Appointments are scheduled through the Dean of Students, at [deanofstudents@criswell.edu](mailto:deanofstudents@criswell.edu).

Wallace Library: Students can access academic resources and obtain research assistance by contacting or visiting the Wallace Library, which is located on campus. For more information, email the Wallace Library at

[library@criswell.edu](mailto:library@criswell.edu). Offsite login information is available in Canvas in the “Criswell Student Training Course” under “Library Information.”

Tutoring Center: Students are encouraged to consult with tutors to improve and enhance their skills and confidence in any subject matter taught at the college. Tutors have been recommended by the faculty to ensure that the tutor(s) are qualified to serve the student body. Every tutor brings experience and expertise in an effort to provide the proper resources for the subject matter at hand. To consult with a tutor, students can visit the Tutoring Center located on the second floor in room E203, or schedule an appointment by emailing [tutoringcenter@criswell.edu](mailto:tutoringcenter@criswell.edu) or by calling 214.818.1373.

## Course Outline/Calendar

Date	Class topic / notes	Readings and assignments due
<b>Week 1</b> August 17	<b><u>In-person class</u></b> <ul style="list-style-type: none"> <li>• Course Introduction</li> <li>• Syllabus</li> <li>• Tools for academic success</li> </ul>	<ul style="list-style-type: none"> <li>• No reading due.</li> </ul>
<b>Week 2</b> August 24	<b><u>In-person class</u></b>	<ul style="list-style-type: none"> <li>• Ch. 1 – Statistics or Sadistics? It’s Up to You</li> <li>• Ch. 1 Reading Quiz</li> <li>• Ch. 2 – Here’s Why We Love R and How to Get Started</li> <li>• Ch. 2 Reading Quiz</li> <li>• Ch. 3 – Using RStudio: Much Easier Than You Think</li> <li>• Ch. 3 Reading Quiz</li> </ul>
<b>Week 3</b> August 31	<b><u>Zoom class</u></b>	<ul style="list-style-type: none"> <li>• Ch. 4 – Computing and Understanding Averages: Means to an End</li> <li>• Ch. 4 Reading Quiz</li> <li>• Ch. 5 – Understanding Variability: Vive la Difference</li> <li>• Ch. 5 Reading Quiz</li> </ul>
<b>Week 4</b> September 7	<b><u>Labor Day – No class</u></b> <ul style="list-style-type: none"> <li>• Ch. 6 Reading Quiz is due on Tuesday, September 8<sup>th</sup> (this is a pretty light chapter)</li> </ul>	<ul style="list-style-type: none"> <li>• Ch. 6 – Creating Graphs: A Picture Really Is Worth a Thousand Words</li> <li>• Ch. 6 Reading Quiz</li> </ul>

<b>Week 5</b> September 14	<b><u>In-person class</u></b>	<ul style="list-style-type: none"> <li>• Ch. 7 – Computing Correlation Coefficients: Ice Cream and Crime</li> <li>• Ch. 7 Reading Quiz</li> </ul>
<b>Week 6</b> September 21	<b><u>Zoom class</u></b>	<ul style="list-style-type: none"> <li>• Ch. 8 – An Introduction to Understanding Reliability and Validity: Just the Truth</li> <li>• Ch. 8 Reading Quiz</li> </ul>
<b>Week 7</b> September 28	<b><u>In-person class</u></b> <ul style="list-style-type: none"> <li>• <b><u>Midterm Exam</u></b></li> <li>• Midterm exam is an in-class, short-answer style exam.</li> <li>• Midterm exam covers chapters 1-8 as well as any lecture material delivered during weeks 1-6.</li> </ul>	<ul style="list-style-type: none"> <li>• No reading due.</li> </ul>
<b>Week 8</b> October 5	<b><u>Zoom class</u></b>	<ul style="list-style-type: none"> <li>• Ch. 9 – Hypotheticals and You: Testing Your Questions</li> <li>• Ch. 9 Reading Quiz</li> <li>• Ch. 10 – Probability and Why It Counts: Fun With a Bell-Shaped Curve</li> <li>• Ch. 10 Reading Quiz</li> </ul>
<b>Week 9</b> October 12	<b><u>In-person class</u></b>	<ul style="list-style-type: none"> <li>• Ch. 11 – Significantly Significant: What It Means for You and Me Ch. 11 Reading Quiz</li> <li>• Ch. 12 – The One-Sample Z Test: Only the Lonely</li> <li>• Ch. 12 Reading Quiz</li> </ul>
<b>Week 10</b> October 19	<b><u>Zoom class</u></b>	<ul style="list-style-type: none"> <li>• Ch. 13 – <math>t(ea)</math> for Two: Tests Between the Means of Different Groups</li> <li>• Ch. 13 Reading Quiz</li> </ul>
<b>Week 11</b> October 26	<b><u>In-person class</u></b>	<ul style="list-style-type: none"> <li>• Ch. 14 – <math>t(ea)</math> for Two (Again): Tests Between the Means of Related Groups</li> <li>• Ch. 14 Reading Quiz</li> </ul>
<b>Week 12</b> November 2	<b><u>Zoom class</u></b>	<ul style="list-style-type: none"> <li>• Ch. 15 Two Groups Too Many? Try Analysis of Variance</li> <li>• Ch. 15 Reading Quiz</li> </ul>
<b>Week 13</b> November 9	<b><u>In-person class</u></b>	<ul style="list-style-type: none"> <li>• Ch. 16 – Two Too Many Factors: Factorial Analysis of Variance – A Brief Introduction</li> <li>• Ch. 16 Reading Quiz</li> </ul>

<b>Week 14</b> November 16	<b><u>Zoom class</u></b>	<ul style="list-style-type: none"> <li>• Ch. 17 – Testing Relationships Using the Correlation Coefficient: Cousins or Just Good Friends</li> <li>• Ch. 17 Reading Quiz</li> </ul>
<b>Week 15</b> November 23	<b><u>No class – Fall Break</u></b>	
<b>Week 16</b> November 30	<b><u>In-person class</u></b>	<ul style="list-style-type: none"> <li>• Ch. 18 – Using Linear Regression: Predicting the Future</li> <li>• Ch. 18 Reading Quiz</li> </ul>
<b>Week 17</b> December 7	<b><u>In-person class</u></b> <ul style="list-style-type: none"> <li>• <b><u>Final Exam</u></b></li> <li>• Final exam is an in-class, short-answer style exam.</li> <li>• Final exam covers chapters 9-18 as well as any lecture material delivered during weeks 8-16.</li> </ul>	<ul style="list-style-type: none"> <li>• No reading due.</li> </ul>

***The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.***



## On-Campus Course Syllabus

### ADDENDUM FOR FA-20

#### STA 201 L1

### Introduction to Statistics

In the event that Criswell College has to close the campus to on-campus classes in during the FA-20 semester, this addendum specifies how your instructor intends to adjust the course in order to allow students to meet the course objectives.

The course requirements, assignments, calendar, and attendance requirements from the syllabus for this course are replicated below. Notes and changes to the information in syllabus are highlighted. Information that is no longer relevant is indicated with a ~~strike-through the font~~ and *replacement or new information is placed in italics*.

#### Course Requirements and Assignments

No change to this requirement.

#### Remote Class Sessions: Identity and Participation Verification

Every class session will be synchronous and use Zoom. You are required to use your web camera for these sessions.