Class Information

Day and Time: Mondays and Wednesdays, 3:15-4:30pm
Room Number: E205

Contact Information

Instructor Name: Dr. Brandon Seitzler
Instructor Email: bseitzler@criswell.edu
Instructor Phone: 214.818.1309
Instructor Office Hours: Tuesdays and Thursdays from 9-11am

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

Diez, David M., Christopher D. Barr, Mine Cetinkaya-Rundel. *OpenIntro Statistics*. 4th ed. 2019.

Note that OpenIntro Statistics, 4th ed. may be downloaded for free at openintro.org/os. Physical copies are also available to purchase on Amazon. I recommend that you purchase a physical copy.

Recommended Reading

- www.khanacademy.org - Use this website to catch up on any basic math skills that you find lacking.
- www.pewforum.org - Use this website to inspire a passion for statistics and social science research.

Course Requirements and Assignments

- Attendance/Participation (10%): Class attendance, preparation and participation are **required**. At the beginning of each class students will sign in and indicate whether they read that week's required assignment. **Half of your attendance/participation grade is for attendance and the other half is for preparation** (it will be hard to participate if you didn't prepare). If you miss classes in this course you will fall behind very quickly. If you read the chapter before class our time together will make much more sense to you. If you are not in class by 3:25 you will be counted absent.
- 8 Homework Assignments (30%): Students will complete eight homework assignments. All assignments must be submitted as hard copies. Assignments are due in the first 15 minutes of class. Late assignments will be penalized ten points per day.
- 3 Exams (20% each): Students will have three exams over the course of the semester. Each exam counts for 20% of the student's final grade. These exams are not cumulative. All exams are in class and open note/open book.
- All late assignments will be penalized 10% per day.
- Additional in-class quizzes and assignments will not count toward your final grade.

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.

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. Pastoral and certified counseling services are also available to Criswell students. Appointments are scheduled through the Dean of Students, at 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. 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 or by calling 214.818.1373.

Course Outline/Calendar

	Readings Due	Assignments Due
Week 1 – Course Introduction		
Monday 1/18	No Class – MLK Day	None
Wednesday 1/20	None	None
Week 2		
Monday 1/25	• 1.1 Case Study: using stents to prevent strokes • 1.2 Data Basics • 1.3 Sampling principles and strategies • 1.4 Experiments	
Wednesday 1/27		
Week 3		
Monday 2/1	• 2.1 Examining numerical data • 2.2 Considering categorical data • 2.3 Cases study: malaria vaccine	
Wednesday 2/3		• HW #1 due
Week 4		
Monday 2/8	• 3.1 Defining probability • 3.2 Conditional Probability	
Wednesday 2/10		• HW #2 due
Week 5		
Monday 2/15	• Exam #1	
Wednesday 2/17	• 4.1 Normal Distribution	
Week 6		
Monday 2/22	• 5.1 Point estimates and sampling variability	

Wednesday 2/24		• HW #3 due
Week 7		
Monday 3/1	• 5.2 Confidence intervals for a proportion	
Wednesday 3/3		• HW #4 due
Week 8		
Monday 3/8	• 5.3 Hypothesis testing for a population	
Wednesday 3/10		• HW #5 due
Week 9 – Spring Break – No Class		
Monday 3/15	None	None
Wednesday 3/17	None	None
Week 10		
Monday 3/22	• Exam #2	
Wednesday 3/24	• 6.1 Inference for a single proportion	
Week 11		
Monday 3/29	• 6.2 Difference of two proportions	
Wednesday 3/31		
Week 12		
Monday 4/5	• 6.3 Testing for goodness of fit using chi-square	
Wednesday 4/7		• HW #6 due
Week 13		
Monday 4/2	• 6.4 Testing for independence in two-way tables	
Wednesday 4/14		
Week 14		
Monday 4/19	• 7.1 One-sample means with the t-distribution	
Wednesday 4/21		• HW #7 due
Week 15		
Monday 4/26	• 7.2 Paired data	
Wednesday 4/28		
Week 16		
Monday 5/3	• 7.3 Difference of two means	
Wednesday 5/5		• HW #8 due
Week 17		
Monday 5/10		
Wednesday 5/12	• Exam #3	

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

On-Campus Course Syllabus
==ADDENDUM FOR SP-21==
STA 201 L1
Introduction to Statistics

In the event that Criswell College has to close the campus to on-campus classes during the SP-21 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.