Fall 2019

STAT 100: Statistical Literacy
Generic Syllabus

Title	**STAT 100 Statistical Literacy (3 credits)**
Description	Participants will study the social statistics encountered by consumers. Investigate the story behind the story. Study the influences on social statistics. Study the techniques used to control these influences. Strong focus on confounding.
Goals	To help students think critically about statistics as evidence in arguments: to see the story behind the story. To help students see value in becoming statistically literate.
Objectives (Student Learning Outcomes)	Can use ordinary English to distinguish association from causation and to form arithmetic associations of numbers and ratios. Can identify and evaluate influences (confounding, assembly, randomness and error/bias) on a statistic. Can identify, evaluate and use various techniques to take control of – or control for – these influences. Can use ordinary English to describe and compare statistics as presented in statements, tables and graphs. Can evaluate the strength of evidence provided by statistics in the everyday media, press releases and journal articles.
Required	Text: *Statistical Literacy* by Schield Registration in the online forum.
Grading Scale	[93≤A+≤100], [90≤A<93], [87≤A-<90], [84≤B+<87], [80≤B<83], [77≤B-<80], [74≤C+<77], [70≤C<74], [65≤C-<70], [50≤D<70],[F<50], and F if you do not show up to take the final exam.
Grading Components Requirements	Chapter Exercises (7@3%) 21% Exams (two) 18% Forum writing (10-16 cases) 20% Final Exam 30% Teacher elective; Attendance 9% Course Evaluations 2%
Online Components	Course instruction is web-enhanced: This course has two online sources. Chapter exercises and quizzes are in the Moodle course management system. Writing is done in an online forum.

Schedule of Activities

Subject to change: Minor changes announced in class, major ones provided in writing.

Week of	Material Covered	Notes / Deadlines
Aug 17	Introduction, Forum/Discussion Board Ch 1 Statistics in Arguments. Take CARE	Aug 17 – Instruction Begins
Aug 24	Ch 2 Forming comparisons. Devices for controlling influences.	Aug 28: Last day to add courses or change sections or grade mode
Aug 31	Evaluate statistics as evidence in media. Review homework	Sep 3 – Labor Day Holiday Sep 7 – Last day to drop without a grade
Sep 7	Ch 3: Understanding Measurements. Confounder influence on averages.	
Sep 14	Ch 4A: Percent/percentage grammar	
Sep 21	Ch 4B: Half tables; rate/chance grammar	
Sep 28	Study statistics in media. Review homework	
Oct 5	Review Ch 1-4A. **Exam 1: Ch. 1-4A**	
Oct 12	Ch 5. Compare ratios. Use Likely grammar	Oct 11-12 – Fall Break
Oct 19	Ch 6 Interpreting Ratios. Medical Tests, Simpson's Paradox; Cornfield Conditions	
Oct 26	Review homework, news studies & Exam 1	
Nov 2	Review Ch 4-6. **Exam 2: Ch 4-6.**	
Nov 9	Ch 7 Samples, significance & confounding	
Nov 16	Assign projects. Review homework/Exam 2. Evaluate statistics as evidence in media.	11/9 – Last day to withdraw without dean's approval
Nov 23	Study statistics in media. Projects/Present	Nov 19-20 – Thanksgiving Break
Nov 30	Project Presentations and Course Review	Dec 4: Last day withdraw w dean approval
Dec 7	**Final Exam Ch 1-7**	**Dec 7 – Final Exam, Time, room TBD**

Forum Challenges: One or two challenges per week.
Chapter Exercises (On Line). Class Project: Determined by Instructor

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Student Learning Outcomes

1. Can distinguish association from causation in reality and in using ordinary English. Can use ordinary English to form arithmetic descriptions and comparisons.
2. Can identify and evaluate known influences (confounding, assembly, randomness and error) on a statistic. Can think hypothetically about influences that are measured but not yet taken into account, unmeasured or unknown.
3. Can identify, evaluate and use various techniques to take control of – or control for – these influences. These techniques include taking control of the assignment of subjects to treatment and control groups, and using selection, ratios and standardization to control for – to take into account – the influence of measured confounders on a statistic and its statistical significance.
4. Can use ordinary English to describe and compare ratios as presented in statements, tables and graphs using percent, percentage, rate and chance grammars.
5. Can evaluate the strength of evidence provided by statistics in the everyday media, in press releases and in journal articles.