



SOC 300-970 Using Statistics in Sociology On Demand Section

Instructor Contact Information

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Course Description

Using Statistics in Sociology is intended to be an introductory course in the study of statistics. Primary emphasis is placed on basic statistical concepts and terms, symbols, and statistical interpretation including univariate statistics, describing bivariate relationships, and the logic of hypothesis testing (or sometimes called tests of statistical significance).

Is there a prerequisite?

Yes. You should have already met the WKU minimum math requirement.

When and Where will class meet?

This is a web- based course so all of the work is done online. The class is composed of 10 **MODULES** or units. Each module has a homework assignment. Homework assignments are completed online and are required prior to attempting exams. Students take 5 Exams at home, each covering the material in two Modules. **Each Exam can be taken UP TO 5 TIMES!**

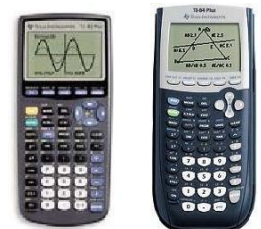
Is there a Text?

No!! Everything has been put on **Blackboard**.

What Materials Do I Need?

- 1) First, and most important, you need a good **hand calculator**. It is recommended that you use a TI83, TI83+ or a TI84. The only real difference in these is that the newer versions use a slightly faster processor, but otherwise they are the same. Prices range from \$90 to \$140 new.

DO NOT purchase a TI85 or TI89—they do not have built in stat functions and are much more difficult to use.



If you don't have one of these already, you have a couple of options. First, find another student and borrow one. This is the same calculator used in Math 116 and there are probably thousands of them on campus. Used TI 83/84 calculators are also available at one of the off-campus bookstores for about \$50.

- 2) A **notebook** to organize lecture notes and homework exercises.
- 3) A computer and internet connection to allow access to **Blackboard**.

What is on Blackboard?

EVERYTHING!!

Module Powerpoints

- Module Lectures (in the form of video files)

- Module Homework Problems

- Module Homework solutions (also video files)

- Supplemental reading materials

Exams



What are the Class Video Recordings on Blackboard?

Lectures and homework solutions for the course have been recorded as video files (go to **COURSE DOCUMENTS** on Blackboard) . These are in video files that you can play on your computer. You can also save them to be played more than once. They can also be saved as video or audio files to be played on other devices such as IPODS.

What about Homework?

HOMework IS REQUIRED AND IMPORTANT! But... Each Module has a homework assignment that is on Blackboard (under "Assignments"). Each "Module Homework Problems" is given a grade **BUT** the homework score points do **NOT** count toward the final grade (so the actual homework grade is just to see if you are ready to go on) . Final grades are based on Exam performances only, not the homework. The idea of the homework is to help you learn the material, not to test you. Here is how it works:

You must make at least a 70 on each Module Homework Problems in order for to move on in the step in the course. (Rationale: if you can't make a 70, you aren't ready to take the exam!) For example, *Module 2 Homework Problems* will only appear **AFTER** *Module 1 Homework Problems* has been completed with a score of 70 or higher. **Exam One**, the next step, will not appear until **AFTER** *Module 2 Homework Problems* has been completed with a score of 70 or higher.

There is a Tegrity Video recording to watch for all 10 Modules in which I work every homework question. **WATCH THE VIDEO** after you have tried the homework.

If you did not make at least a 70 the first time, watch the homework solutions and retake the homework. You can attempt the Module Homework Problems as many times as you want.

Homework may be saved. It does not have to be completed in one sitting.

The homework is very important. Do well on the homework and you will do well on the Exams. You will learn by your mistakes on the homework.

When Should I do What? When Will Exams appear?

Here is a table to help:

<i>Week (based on typical 18 Week Semester)</i>	<i>Recommended to be Completed</i>
Week 1	Download Respondus Lockdown Browser (instructions below) Watch "Class Overview" Video
Week 2	Module 1 Homework Problems (min. score 70)
Week 3	Module 2 Homework Problems (min. score 70)
Week 4	EXAM ONE (appears when homework above completed, and MUST BE TAKEN AT A DELO TESTING CENTER)
Week 5	Module 3 Homework Problems (min. score 70)
Week 6	Module 4 Homework Problems (min. score 70)
Week 7	EXAM TWO (appears when homework above completed)
Week 8	Module 5 Homework Problems (min. score 70)
Week 9	Module 6 Homework Problems (min. score 70)
Week 10	EXAM THREE (appears when homework above completed)
Week 11	Module 7 Homework Problems (min. score 70)
Week 12	Module 8 Homework Problems (min. score 70)
Week 13	EXAM FOUR (appears when homework above completed)
Week 14	Module 9 Homework Problems (min. score 70)
Week 15	Module 10 Homework Problems (min. score 70)
Week 16	EXAM FIVE (appears when homework above completed)

How FAST can I do the Modules and Exams?

You can work as fast as you want. This is "mostly" a self-pace course **so get moving!** You have either one semester or 9 months to complete any *On Demand* course. Please contact *On Demand* if you have questions about your expected completion date.

How Much are Exams Worth?

100 points each for a total of 500 points possible in the course.

How MANY MODULES and EXAMS do I have to complete?"

That depends on the grade you want to earn. Here are your choices:

Grading Curve (Full Course)

Requirements: complete Modules 1-10 and take ALL FIVE exams.

Students who do this will receive a final grade based on the total number of points



earned on the 5 exams and following curve: A (450-500 points); B (400-449 points); C (350-399 points); D (300-349 points).

"C" Opt Out

Students who choose to "Opt Out" **do NOT** have to take exam 5 (so they do not have to do Modules 9 and 10). But, students who choose this "Opt Out" Option can earn no higher than a "C" in the class. Requirements: complete Modules 1-8 and Take Exams 1-4. **DO NOT ATTEMPT EXAM 5.** Students who "opt out" will receive a final grade based on the total number of points earned on Exams 1-4 and the following curve: C (280-400 points); D (240-279 points).

Where do I take Exams?

At home **BUT:** *On Demand* wants at least one exam taken in person at an approved DELO Testing Center. Therefore, I have chosen the first exam as the one that **MUST** be taken in person at an approved testing center. Here is a link on how to sign up to take the exam: <http://wku.edu/testing> Exam One, like all the others, may also be taken up to 5 times, and that includes multiple attempts the same day. Can you go back and retake Exam One to improve your score, even if you have completed, for example, Exam Two? **YES!**

After the first exam, all others **MAY** be taken at home, **PROVIDED** you think you can complete the exam in under 40 minutes (not a problem if you are prepared). See options discussed below.

Can I take the Exams more than Once?

YES!! *You can take each of them up to 5 times but here are the RULES:* KNOW THE MATERIAL—study, study, study before you take it—go into it just like a closed book exam. Do the homework a 2nd time and try to get 100%.

The exams are **TIMED WITH AUTOMATIC SUBMISSION.** You have **40 MINUTES** to complete the exam. Automatic submission means the exam **WILL** be submitted automatically when the time has expired. **But, what if I can't do it in that # of minutes???** (SEE BELOW).

Each test will be randomly drawn from a pool of questions so don't expect the same questions each time.

Blackboard will **ONLY** record the **last score** so the earlier test score will be erased the moment you start a retake.

What if I can't do it in that # of minutes???

If you absolutely, positively can't take a timed exam at home, you **do** have an alternative. If you are willing to take the exam at a WKU proctored test site you

can have all the time you want. BUT, you will take it closed book and closed notes - NO powerpoints, no nothing—just you and your lucky rabbit's foot!. Well, actually you get to use your calculator, a formula sheet (it will be provided) and scratch paper.

Here is where to sign up for a proctored test a DELO Testing Center site: <http://wku.edu/testing> . And, if you try an exam at home and later decide to take the untimed exam at a testing center, don't worry - I will count either the last at home, or the last testing center score for that exam, whichever is higher. If you are living outside of Bowling Green you need to make arrangements to take the exam at one of the approved testing sites. There are literally 100's of them throughout the U.S. You can find a list of approved testing sites on the DELO web page. DELO needs time to make arrangements with distant testing centers so **plan early**.

YOU MUST USE RESPONDUS LOCKDOWN BROWSER

You must use a special Internet Browser named **Respondus Lockdown Browser** to take the exams. You CANNOT use Explorer, Firefox, Safari or Google Chrome. ONLY Respondus Lockdown Browser has access to the Blackboard site. It is FREE and can be downloaded from WKU's Blackboard site (look at the top of the Blackboard page and click on *Software* tab at the top of our Blackboard page) or download it directly from <http://www.respondus.com/lockdown/information.pl?ID=476234332>

What if I have a *SLOW* Internet connection or a *SLOW* computer?

The lecture and homework video files require high speed internet connection since the video files are very large. If your internet connection is slow, ***the video files (both lecture and homework solutions) are also available on DVD for FREE!!***. Contact the On Demand office (270)-745-4158 to obtain the files on disk. However, Blackboard Exams MUST be taken online at home (or at a testing center as explained below).

WHEN WILL FINAL GRADES BE TURNED IN?

Since Exams can be taken multiple times, and you have the C Opt Out option, it is difficult to know when you are done. Therefore, please send an email to me (your instructor) john.musalia@wku.edu when you are finished so I can send a grade to On Demand.

WKU Policy for Students With Disabilities

Students with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for this course must contact the Office for Student Disability Services, Room A200 Dowling University Center. The OFSDS telephone number is (270) 745-5004 V/TDD. Please DO NOT request accommodations directly from the professor or instructor without a letter of accommodation from the Office for Student Disability Services

SYMBOL PAGE

1. X_i _____
2. _____
3. \bar{X} _____
4. _____
5. X_i _____
6. X_i^2 _____
7. X_i^2 _____
8. $(X_i - \bar{X})^2$ _____
9. _____
10. s^2 _____
11. s _____
12. s^2 _____
13. Z_i _____
14. Y_i _____
15. Y_i^2 _____
16. $X_i Y_i$ _____
17. r _____
18. r^2 _____
19. b _____
20. a _____
21. Y_i' _____
22. $Y_i - Y_i'$ _____
23. σ^2 _____
24. G _____
25. \bar{x} _____
26. \bar{x} _____
27. p _____
28. p_s _____
29. p _____
30. p _____

FORMULAS – SOCIOLOGY 300

Proportions, percents, ratio, rate

$$p = \frac{f_i}{n} \quad p = \frac{f_i}{n} \quad \% = \frac{f_i}{n} 100 \quad \text{ratio} = \frac{f_1}{f_2}$$

$$\text{rate} = \frac{f_i}{n} \text{ base e.g. } 100, 1000, 100,000$$

means

$$\frac{X_i}{n} - \frac{X}{n}$$

Sum of Squares

$$SS(X_i - \bar{X})^2 = (X_i - \bar{X})^2 X_i^2 \quad \frac{X_i^2}{n}$$

Variance and Standard Deviation

$$s^2 = \frac{SS}{n-1} = \frac{(X_i - \bar{X})^2}{n-1} = \frac{(X_i - \bar{X})^2}{n-1} = \frac{X_i^2 - \frac{X_i^2}{n}}{n-1}$$

$$s^2 = \frac{SS}{n-1} = \frac{(X_i - \bar{X})^2}{n-1} = \frac{(X_i - \bar{X})^2}{n-1} = \frac{X_i^2 - \frac{X_i^2}{n}}{n-1}$$

$$s = \sqrt{\frac{SS}{n-1}} = \sqrt{\frac{(X_i - \bar{X})^2}{n-1}} = \sqrt{\frac{(X_i - \bar{X})^2}{n-1}} = \sqrt{\frac{X_i^2 - \frac{X_i^2}{n}}{n-1}}$$

$$s = \sqrt{\frac{1}{n-1} \left[\sum_{i=1}^n X_i^2 - \frac{(\sum_{i=1}^n X_i)^2}{n} \right]}$$

Interquartile Range and Z-scores

$$Q_3 - Q_1 = IQR \quad Z_i = \frac{X_i - \bar{X}}{s}$$

Correlation and Regression

$$r = \frac{n \sum X_i Y_i - \sum X_i \sum Y_i}{\sqrt{[n \sum X_i^2 - (\sum X_i)^2][n \sum Y_i^2 - (\sum Y_i)^2]}}$$

$$a = \bar{Y} - b\bar{X} \quad b = \frac{\sum Y_i - n\bar{Y}}{\sum X_i - n\bar{X}}$$

Chi-Square and Gamma

$$\chi^2 = \sum \frac{(f_o - f_e)^2}{f_e} \quad \text{Gamma} = \frac{N_s - N_d}{N_s + N_d}$$

One Sample Difference of Means

$$Z = \frac{\bar{X} - \mu}{\frac{s}{\sqrt{n}}} \quad t = \frac{\bar{X} - \mu}{\frac{s}{\sqrt{n}}}$$

One Sample Difference of Proportions

$$Z = \frac{p_s - p}{\sqrt{\frac{p_u(1-p)}{n}}}$$

Two Sample Difference of Means

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} \quad t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

Two Sample Difference of Proportions

$$Z = \frac{p_{s1} - p_{s2}}{\sqrt{p(1-p) \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}} \quad \text{where : } p = \frac{X_1 + X_2}{n_1 + n_2}$$