Course Description
Introduction to descriptive and inferential statistical techniques used in the social sciences. Topics include data collection procedures, measures of dispersion, correlation designs, probability, statistical inference, and analysis of variance.
This is a fully online, eight-week course. We will not meet face-to-face at any time.

Course Prerequisites
None

Course Objectives
Upon successful completion of this course, students will be able to:
1. Describe the basic objectives of using descriptive and inferential statistics in social science research settings.
2. Create graphs and tables to appropriately display data.
3. Use probability theory to make appropriate decisions about statistical analyses.
4. Apply the 5-step procedure for hypothesis testing.
5. Use the appropriate descriptive statistics for a variety of social science research settings, including measures of central tendency, variability and correlation.
6. Use the appropriate parametric or nonparametric inferential statistics for a variety of social science research settings, including Chi Square, t-test, and ANOVA.
7. Apply proper data collection procedures, hypothesis testing, statistical analyses, and APA style in a simple social science research project.

Required Text
ISBN: 978-0-495-90994-1

Course Assignment Descriptions
You will have several opportunities to demonstrate your knowledge and understanding of the principles taught in this course. The primary means of evaluating your work will be through practical application of the material. In the event that you have difficulty completing any of the assignments for this course, please contact your instructor immediately. Please refer to the Weekly Materials section of the cyberclassroom for
complete details regarding the activities and assignments for this course. The following is merely a summary.

**Discussion contributions (160 points)**

(three postings per week @ 20 points per week)

**Initial Substantive Posts:** Submit an initial response to each of the prompts provided each week by your instructor. Your initial post should be substantive (approximately ½ of a page in length) and must be posted by midnight, Central Time by Wednesday of each week. In your substantive post you are encouraged to use references (you may use your textbook); show evidence of critical thinking as it applies to the concepts or prompt and/or use examples of the application of the concepts to work and life. Proper punctuation, grammar and correct spelling are expected. Please use the spell-check function.

**Required Replies:** You must reply to at least two different peers per prompt. Your replies should build on the concept discussed, offer a question to consider, or add a differing perspective, etc. Rather than responding with, "Good post," explain why the post is "good" (why it is important, useful, insightful, etc.). Or, if you disagree, respectfully share your alternative perspective. Just saying "I agree" or "Good idea" is not sufficient for the posts you would like graded.

**Posting Guidelines:** Overall, postings must be submitted on at least two separate days of the week. It is strongly recommended you visit the discussion forum throughout the week to read and respond to your peers’ postings. You are encouraged to post more than the required number of replies.

(Please review the Policies section of Blackboard for further details.)

**Weekly Assignments (8 @ 50 points each = 400 points)**

Each week you will complete an assignment relating to the concepts explored during that week’s lesson. The assignments may contain exercises from the text, as well as questions to answer and other similar tasks. Specific instructions for each assignment are provided in the corresponding weekly lesson.

**Statistics in the Media Assignment (30 points)**

Find an online report of a simple research study that includes statistics. You must include website link to the report so that your instructor can access it. Write a brief paper summarizing your understanding of what was reported. Include the following in your summary:

1. Can you tell if this report was based on an experimental study, a correlational study, or can you not tell? (Remember, not all statistics come from research studies, so make sure you choose a report that is based on research rather than just reporting some statistics.)
2. Identify at least one dependent variable (note that there may be more than one).
3. What type of measurement scale is this dependent variable?
4. How was this dependent variable operationally defined?
5. Identify at least one independent variable (note that there may be more than one).
6. What type of measurement scale is this independent variable?
7. How was this independent variable operationally defined?
8. Website link to the report.
**Independent Project (130 points total)**
You are to design an observational experiment with at least three between-subjects conditions of one independent variable that can be analyzed with an ANOVA. Your experiment cannot involve doing anything to any humans or animals, because that requires institutional approvals that are beyond the scope of this class. You might choose to observe the behavior of people or animals in a public place (without actually doing something to them or conversing with them), or you could analyze something broadcast over television or the Internet.

This project will be completed in two parts:

**Week 6: Introduction (50 points):**
You are to design an observational experiment with at least three (3) between-subjects conditions of one independent variable that can be analyzed with an ANOVA. Your experiment cannot involve doing anything to any humans or animals, because that requires institutional approvals that are beyond the scope of this class. You might choose to observe the behavior of people or animals in a public place (without actually doing anything to them) or you could analyze something broadcast over television or the Internet. You could also analyze objects rather than people or animals. You should have between five (5) and ten (10) subjects or observations in each condition of your independent variable. Please **do not collect data or conduct calculations** until you receive feedback from your instructor for this part of the assignment.

This week you will need to submit a short paper containing your topic idea and answering the following questions/prompts:

1. What is your research question?
2. Give a brief description of how you intend to test this question.
3. What is your independent variable (include an operational definition for your independent variable with enough detail that I will be able to understand exactly what it is)?
4. What are the conditions of your independent variable?
5. What is your dependent variable (include an operational definition for your dependent variable with enough detail that I will be able to understand exactly what it is)?
6. How will you measure your dependent variable?
7. What is the level of measurement of your dependent variable?
8. How do you know that ANOVA is an appropriate analysis for your dependent variable?
9. What are the descriptive statistics you will calculate (don't calculate anything yet)?
10. What kinds of confounding variables are you concerned about?

You do not need to use APA formatting for this assignment, but please be sure that the answer to each question is written in your own words. If you choose to utilize outside sources in any way, then citations and references in APA format will be required in order to give credit to your sources.
Week 8: Completion (100 points):
To complete your independent project, you are to collect the data for your observational experiment and perform a one-way, between-subjects ANOVA on the data using the definitional formula. You are to turn in an APA style paper that includes the following:

1. Description of your research project that includes the operational definitions for your variables and your research question.
2. Description of the 5-steps of hypothesis testing.
3. An APA style statement of results including the appropriate details for the inferential statistic(s) and appropriate descriptive statistics.
4. Interpretation of your results and any limitations you are aware of in your project (everyone should be able to identify at least one potential confounding variable).
5. One graphic representation of your data (table or figure).
6. An ANOVA Summary Table. You will also turn in the step-by-step details of the descriptive and inferential statistics as you calculated them using definitional formulas. This should be included as an appendix to the paper, or it can be hand-written if it's neat and you can scan the document in order to turn in.

Course Schedule At-A-Glance*
Please refer to the Term Calendar in our cyberclassroom for specifics regarding dates.

<table>
<thead>
<tr>
<th>Week</th>
<th>Readings &amp; Activities</th>
<th>Assignments Due</th>
<th>Date/Time Due**</th>
</tr>
</thead>
</table>
| Week 1 | • Chapter 1: Introduction to Statistics  
• Chapter 2: Statistics and the Research Process | • Course Discussion  
• Week 1 Assignment | • Midnight CT on Weds/Sun.  
• Sunday at midnight |
| Week 2 | • Chapter 4: Measures of Central Tendency: The Mean, Median, and Mode  
• Chapter 5: Measures of Variability: Range Variance, and Standard Deviation | • Course Discussion  
• Week 2 Assignment | • Midnight CT on Weds/Sun.  
• Sunday at midnight |
| Week 3 | • Chapter 3: Frequency Distributions and Percentiles  
• Chapter 6: z-Scores and the Normal Curve Model | • Course Discussion  
• Week 3 Assignment | • Midnight CT on Weds/Sun.  
• Sunday at midnight |
| Week 4 | • Chapter 9: Using Probability to Make Decisions about Data  
• Chapter 10: Introduction to Hypothesis Testing | • Course Discussion  
• Week 4 Assignment | • Midnight CT on Weds/Sun.  
• Sunday at midnight |
| Week 5 | • Chapter 12: The Two-Sample t-Test (computational formula optional) | • Course Discussion  
• Week 5 Assignment  
• Statistics in the Media Assignment | • Midnight CT on Weds/Sun.  
• Sunday at midnight |
| Week 6 | • Chapter 13: The One-Way Analysis of Variance (computational formula optional) | • Course Discussion  
• Week 6 Assignment  
• Independent Project | • Midnight CT on Weds/Sun.  
• Sunday at midnight |

*Please refer to the Term Calendar in our cyberclassroom for specifics regarding dates.
**Introduction**

- **Week 7**
  - Chapter 7: The Correlation Coefficient (computational formula optional)
  - Course Discussion
  - Week 7 Assignment
  - Midnight CT on Weds/Sun.
  - Sunday at midnight

- **Week 8**
  - Chapter 15: Chi Square and Other Nonparametric Procedures
  - Course Discussion
  - Week 8 Assignment
  - Independent Project Completion
  - Midnight CT on Weds/Sat.
  - **Saturday** at midnight

* All online weeks run from Monday to Sunday, except the last week, which ends on Saturday.
** All assignments are due at midnight Central Time. (All submissions to the Blackboard system are date/time stamped in Central Time).

### Assignments At-A-Glance

<table>
<thead>
<tr>
<th>Assignment/Activity</th>
<th>Qty.</th>
<th>Points</th>
<th>Total Points</th>
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<tbody>
<tr>
<td>Weeks 1-8: Discussion</td>
<td>-</td>
<td>20 per week</td>
<td>160</td>
</tr>
<tr>
<td>Week 1 Assignment</td>
<td>1</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Weeks 2-8 Assignments</td>
<td>7</td>
<td>50</td>
<td>350</td>
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<tr>
<td>Week 5: Statistics in Media</td>
<td>1</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Week 6: Independent Project: Introduction</td>
<td>1</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Week 8: Independent Project: Completion</td>
<td>1</td>
<td>100</td>
<td>100</td>
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<tr>
<td><strong>TOTAL POINTS</strong></td>
<td></td>
<td></td>
<td><strong>750</strong></td>
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*Please refer to the Policies menu for more information about our Course Discussions.

### Grading Scale

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
<th>Points</th>
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<tbody>
<tr>
<td>A</td>
<td>90 to 100%</td>
<td>648-720</td>
</tr>
<tr>
<td>B</td>
<td>80 to 89%</td>
<td>576-647</td>
</tr>
<tr>
<td>C</td>
<td>70 to 79%</td>
<td>504-575</td>
</tr>
<tr>
<td>D</td>
<td>60 to 69%</td>
<td>432-503</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 60%</td>
<td>&lt; 432</td>
</tr>
</tbody>
</table>

To access your scores, click on Grades in the Student Tools area in Blackboard.

### Important Policies

All course-specific policies for this course are spelled out here in this syllabus. However, additional university policies are located in the Policies section of Blackboard. You are responsible for reading and understanding all of these policies. All of them are important. Failure to understand or abide by them could have negative consequences for your experience in this course.

### Editorial Format for Written Papers

All written assignments are to follow the APA writing style guidelines for grammar, spelling, and punctuation. This online course includes information regarding the APA style under “Writing and Research Resources” in the **Resource Room** on the course menu in Blackboard.
Ottawa Online Late Policy
With instructor approval, assignments may be accepted for up to one week after the due date, but a minimum automatic deduction of 10% of the points will be assessed. The instructor also has the option of increasing this deduction percentage up to a maximum of 20%. Extenuating circumstances may be determined on rare occasions and an extension allowed without a deduction, but only at the sole discretion of the instructor.

Discussion board postings will not be accepted for credit when posted after the close of the discussion week. There are no exceptions to this rule; however, solely at the discretion of the instructor, the student may be allowed to submit an alternative assignment to make up for the points under extenuating circumstances. If granted, this should be an exception to the rule.

No assignments will be accepted after the last day of the course (end of term) unless arrangements have been made and “approved” by the instructor at least one week in advance.

Saving Work
It is recommended that you save all of your work from this course on your own computer or flash drive. The capstone course you take at the end of your program may require you to have access to this work for culminating assignments and/or reflections.

Academic Integrity
Plagiarism and cheating will not be tolerated at any level on any assignment. The reality of cyberspace has made academic dishonesty even more tempting for some, but be advised that technology can and will be used to help uncover those engaging in deception. If you ever have a question about the legitimacy of a source or a procedure you are considering using, ask your instructor. As the University Academic Council approved on May 29, 2003, “The penalty for plagiarism or any other form of academic dishonesty will be failure in the course in which the academic dishonesty occurred. Students who commit academic dishonesty can be dismissed from the university by the provost/director.”
Please refer to Academic Honesty in the Policies section of the online course menu for important information about Ottawa University’s policies regarding plagiarism and cheating, including examples and explanations of these issues.

Student Handbook
Please refer to your student handbook for all university regulations. The Resource Room on the course menu in Blackboard contains information about where to find the student handbook online for your campus.

Please see Policies in Blackboard for additional university policies.

Blackboard Technical Support
The Resource Room in Blackboard contains links to student tutorials for learning to use Blackboard as well as information about whom to contact for technical support. Ottawa University offers technical support from 8 a.m. to midnight Central Time for all students, staff, and faculty at no cost. See www.ottawa.edu/ouhelp for contact information.
Ottawa University Mission Statement
The mission of Ottawa University is to provide the highest quality liberal arts and professional education in a caring, Christ-centered community of grace which integrates faith, learning and life. The University serves students of traditional age, adult learners and organizations through undergraduate and graduate programs.