

AUBURN UNIVERSITY

COLLEGE OF EDUCATION

COURSE SYLLABUS

**Course Title**: Design and Analysis in EducationI

**Course Number:** ERMA 7300

**Section:** 11754 | 001

**Instructor:** Dr. Abbygail Langham

**Program:** Educational Research Methods & Analysis (ERMA)

**Department:** Educational Foundations, Leadership, and Technology

**Semester:** Spring 2023

**Credit Hours:** 3 semester hours (Graduate)

**Class Meetings:** Tuesdays, 5:00-7:50 pm, Haley Center 3430

**Canvas Site:** auburn.instructure.com

**Office:**  Melton Student Center Suite 1203, phone (334) 844-8610

**Office Hours:** By appointment

**E-mail:** langhat@auburn.edu

**Prerequisites:**  ERMA 7200 or Equivalent

**Corequisite:** None

**DATE SYLLABUS PREPARED:** January 17, 2023

**INSTRUCTOR:**

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| Dr. Abbygail T. Langham langhat@auburn.edu (334) 844-8610 |  |

**Bio:** Dr. Abby Langham is the inaugural Director of [Assessment & Strategic Planning](http://assessment.auburn.edu/) in Student Affairs at Auburn University (AU), a position she has held since 2013. Dr. Langham came to AU as an institutional researcher from the University of Alabama at Birmingham (UAB), the same institution where she completed her Ph.D. in Educational Leadership in 2012. She has also worked at the University of Pennsylvania’s Penn Center for Educational Leadership. In addition, Dr. Langham earned a B.A. in History and a M.A. in Public Administration from Auburn University. She is a member of the Leadership Lee County class of 2023, representing Student Affairs at Auburn University. Dr. Langham served as a Board member and President of NASPA-AL, was elected as NASPA’s Womxn in Student Affairs Knowledge Community Co-Chair Elect in 2022, and was recognized with NASPA-AL’s Outstanding Service to Region III Award in 2020. She was the recipient of the Campus Labs (now Anthology) All-Star Award in 2017 for creating a sustainable culture of assessment. Dr. Langham regularly contributes to her field through presentations and publications. She also enjoys teaching graduate students in the Department of Educational Foundations, Leadership, and Technology within AU’s College of Education. In addition to her director position and teaching responsibilities, Dr. Langham is often called on to lead assessment and strategic planning activities both at her current institution and beyond. Dr. Langham resides in Auburn, AL with her husband and their two daughters.

**AUBURN UNIVERSITY COLLEGE OF EDUCATION VISION STATEMENT:** Our vision is one of transformation. We strive to be and prepare agents of change. We seek to establish and work collaboratively within socially responsive learning communities that value the mosaic of a diverse society. Our vision includes engaging in the continuous learning necessitated by a rapidly advancing world, identifying and addressing critical issues related to the education of all people, and using technology to broaden and support learning opportunities. It is a vision of change that embraces the inclusive, collaborative, and technological aspects of our mission. It is a vision that will establish us as a college representing educational advocacy and innovation in the 21st century.”

**AUBURN UNIVERSITY COLLEGE OF EDUCATION MISSION STATEMENT:** “The mission of the College of Education is to build a better future for individuals, our state, our nation, and our world. We fulfill our mission by preparing competent, committed, and reflective professionals as we engage in outstanding teaching, cutting-edge research, and meaningful outreach.”

**RELATIONSHIP OF THIS COURSE TO THE COLLEGE OF EDUCATION**

**CONCEPTUAL FRAMEWORK:** The course closely connects to the College of

Education’s Conceptual Framework. The framework was established using professional,

state, and institutional standards as a guideline for selecting the following proficiencies:

“competent, committed, and reflective professionals who have the knowledge, skills, and

dispositions needed to activate the transformative, inclusive, collaborative, and

technological aspects of the College’s mission and its intellectual philosophy”.

(<http://www.education.auburn.edu/conceptual-framework>)

**COURSE DESCRIPTION**

This course covers basic methods of descriptive and inferential analysis including chi-square, t-tests, between and within subjects ANOVA, mixed ANOVAs, and hierarchical designs as they are utilized in educational research.

**STUDENT LEARNING OUTCOMES FOR ERMA 7300**

Upon completion of this course, the student will be able to:

* Explain the process of hypothesis testing and apply to research problems
* Identify different types of research designs and variables found in published

 articles

* Describe the strengths and limitations of different research designs
* Identify applications of a wide variety of statistical procedures
* Solve educational research problems using statistical tests of significance
* Make accurate interpretations of statistical findings
* Use data analysis software (SPSS) to solve statistical problems
* Review published research literature to examine the application of

 measurement, design, and analysis procedures

* Prepare a written summary of data analysis results in APA format

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| **COE Conceptual Framework** | **Course Outcomes** | **Evaluation Method** |
| **Competent Professionals** |  |  |
| Understand the central concepts, tools of inquiry, and structures of the content they teach or practice | Explain the process of hypothesis testing and apply to research problems;Identify different types of research designs and variables found in published articles;Describe the strengths and limitations of different research designs; | Lab Assignments; Reflect & Discuss Assignments  |
| Create learning experiences that make the content they teach or practice meaningful for individuals | Review published research literature to examine the application of measurement, design, and analysis procedures;Prepare a written summary of data analysis results in APA format; | Lab Assignments; Mid-term Exam; Final Exam; |
| Understand how individuals differ in their approaches to learning and create instruction or implement other professional practices adapted to this diversity | Make accurate interpretations of statistical findings;Use data analysis software (SPSS) to solve statistical problems;Review published research literature to examine the application of measurement, design, and analysis procedures;Prepare a written summary of data analysis results in APA format; | Lab Assignments; Mid-term Exam; Final Exam; Reflect & Discuss Assignments |
| **COE Conceptual Framework** | **Course Outcomes** | **Evaluation Method** |
| **Competent Professionals (continued)** |  |  |
| Use knowledge of how individuals learn and develop to provide educational opportunities that support intellectual, social, and personal development | Review published research literature to examine the application of measurement, design, and analysis procedures; | Reflect & Discuss Assignments |
| Understand and use a variety of evidence-based processional practices in reasoned and flexible ways to encourage individual development of critical thinking, problem solving, and performance skills | Solve educational research problems using statistical tests of significance;Make accurate interpretations of statistical findings;Use data analysis software (SPSS) to solve statistical problems; | Lab Assignments; Mid-term Exam; Final Exam; |
| Use an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation. | Review published research literature to examine the application of measurement, design, and analysis procedures; | Lab Assignments; Reflect & Discuss Assignments |
| Use knowledge of effective verbal and non-verbal communication to foster active inquiry, collaboration, and supportive interaction in learning environments. | Review published research literature to examine the application of measurement, design, and analysis procedures;Prepare a written summary of data analysis results in APA format; | Lab Assignments; Reflect & Discuss Assignments |
| Plan professional practices based upon knowledge of subject matter, individuals, the community, and identified goals. | Solve educational research problems using statistical tests of significance;Make accurate interpretations of statistical findings;Use data analysis software (SPSS) to solve statistical problems; | Lab Assignments; Mid-term Exam; Final Exam; |
| Understand and use formal and informal assessment strategies to evaluate and ensure continuous progress toward identified goals. | Use data analysis software (SPSS) to solve statistical problems;Review published research literature to examine the application of measurement, design, and analysis procedures;Prepare a written summary of data analysis results in APA format; | Lab Assignments; Mid-term Exam; Final Exam; Reflect & Discuss Assignments |
| Use technology in appropriate ways. | Use data analysis software (SPSS) to solve statistical problems; | Lab Assignments; Mid-term Exam; Final Exam; |
| **Committed Professionals** |   |   |
| Engage in responsible and ethical professional practices. | Describe the strengths and limitations of different research designs; | Lab Assignments; Mid-term Exam; Final Exam; Reflect & Discuss Assignments |
| Contribute to collaborative learning communities. | Review published research literature to examine the application of measurement, design, and analysis procedures;Prepare a written summary of data analysis results in APA format; | Reflect & Discuss Assignments |
| Demonstrate a commitment to diversity. | Solve educational research problems using statistical tests of significance; | Lab Assignments; Mid-term Exam; Final Exam; |
| Model and nurture intellectual vitality. | Use data analysis software (SPSS) to solve statistical problems; |  Lab Assignments; Mid-term Exam; Final Exam; |
| **Reflective Professionals** |   |   |
| Analyze past practices to stimulate ongoing improvement of future practices. | Review published research literature to examine the application of measurement, design, and analysis procedures;Prepare a written summary of data analysis results in APA format; | Reflect & Discuss Assignments |

**MATERIALS**

***Required Text***

* Ross, M. E. & Shannon, D. M. (2011). *Handbook on* *applied quantitative methods in education* (2nd Edition). Dubuque, IA: Kendall/Hunt Publishing Company. ISBN# 978-0-7575-9156-3 - <https://he.kendallhunt.com/product/handbook-applied-quantitative-methods-education>
* Salkind, N. J. & Frey, B. B. (2019). *Statistics for people (who think) they hate statistics*. (7th Edition). Thousand Oaks, CA: Sage Publications.

***Recommended Text***

* American Psychology Association (2020)*. Publication manual of the American Psychological Association (7th ed.)*. American Psychological Association.

***Required Technology and Software***

* Active Auburn University email account
* Internet access on a laptop/desktop
* Microsoft Office Word
	+ For a FREE download of Microsoft Suite available to Auburn University students, faculty, and staff, visit: <https://auburn.service-now.com/it/?id=sc_cat_item&sys_id=b5412a56dbde72002fb0fba9bf96196e>
* SPSS version 25/26/27/28
* If you have a university desktop/laptop, you can request a copy of SPSS from OIT Help Desk at the Learning Resources Center. For more information, visit <https://education.auburn.edu/learning-resources-center/>
* You can purchase or rent a copy of SPSS. For more information visit <https://www.ibm.com/products/spss-statistics-gradpack>

\*At a minimum, you will need the “**GradPack Standard For Students”** version to complete the analyses for this course.

* On campus, the Haley Center lab computers have SPSS installed
* PDF file creator (e.g., Adobe Acrobat)
* Zoom for video conferencing

**TECHNICAL SKILLS**

ERMA 7300 students are expected to perform the following basic technology skills:

* Open files; Save files; Copy-Paste; Use track changes within documents; Create tables; Create Word and PDF documents.
* Open, download, and upload documents utilizing Canvas.
* Review Instructor feedback on Canvas.

For Canvas resources, visit<http://wp.auburn.edu/biggio/canvas/student-help/>

**COURSE POLICY STATEMENTS**

***Canvas***

* This course will utilize Canvas
* All the instructional and assignment materials are to be accessed on Canvas unless otherwise given in class.
* Upload all your completed assignments on Canvas.
* Assignments will be graded on Canvas. You can check your grade and my feedback for each assignment on Canvas.

***Email and Communication***

* Professional email communication is expected. Send all emails via the Auburn Tiger Email system utilizing your Auburn University email account.
* All assignments and discussions should be written in a scholarly manner, using APA Style 7th edition for references and citations within a text. All written assignments should be double-spaced, with 12-point Times New Roman font, 1-inch margins, and include a cover page and reference page (neither of which are included in the page length of the document). Phones, tablets, and laptops are welcome in the classroom for use on course related activities. Students must avoid regular, subtle use of devices (text, social media, etc.). Distractions, resulting from the use of electronic devices will result in a grade penalty.

***Attendance and Participation***

* Consistent participation is the main key to success in any course.
* This is a 3-credit hour, graduate-level, lecture course. Plan for a minimum of *3 plus solid hours, uninterrupted class time each week* to complete coursework. Also plan on additional homework time for completing readings and assignments that may require over the 3-hour class time. Students should expect to spend a minimum of 6-7 hours per week on assignments and preparation outside of class time.
* Students are expected to attend all class meetings on time and participate in all classroom exercises, as found in the Student Policy eHandbook. Attendance and participation are essential for successful completion of the course. Active and mature participation includes asking questions, sharing experiences, and contributing to the class community. Each student is a part of the classroom community. The total learning environment depends upon the contributions of each individual. Absences must be handled like they would be in a contracted campus professional position: communicated and planned for in advance. Students are responsible for initiating arrangements for missed work due to excused absences. Since the class meets only once weekly, excessive absences (more than two) may result in a lower grade for the course. Extenuating circumstances will be considered on an individual basis, especially if negotiated ahead of time. A successful student demonstrates initiative in the area of participation and timely assignment completion. Students are responsible for adding to the knowledge base during class by discussing input prepared and gained from their readings and coursework. The quality (not the quantity) of participation is important. Students who come to class unprepared to discuss and/or perform course concepts will be downgraded accordingly.

***Assignment Policy***

* Assignments are due by 11:59 PM CST on the due date.
* Submit assignments on Canvas in Word document format.
* No work will be accepted as an E-mail and/or E-mail attachment.
* All work must be typed, or it will not be graded.

***Late Assignments Policy***

All discussions and assignments in this course are cumulative, building upon each other as the semester progresses. As such, it is crucial that the student complete his/her work on time. In the case of illness or other excused absence, students should give notification as soon as possible and before the deadline in question. When feasible, the student must notify the instructor prior to the occurrence of any excused absences, but in no case shall such notification occur more than one week after the absence. Appropriate documentation for all excused absences is required.

* Late assignments will receive a 10% reduction per calendar date past due.
* Assignments 7 days overdue from the due date will not be accepted.
* The only exception for not receiving a penalty for submitting an assignment past the due date will be in the case of an emergency. Per Auburn University attendance policy, emergencies include:
	+ Illness of the student or serious illness of a member of the student’s immediate family. The instructor may request appropriate verification.
	+ The death of a member of the student’s immediate family. The instructor may request appropriate verification.
	+ Trips for members of the student organizations sponsored by an academic unit, trips for university classes, and trips for participation in intercollegiate athletic events. When feasible, the student must notify the instructor prior to such absences, but in no case more than one week after the absence. Instructors may request formal notification from appropriate university personnel to document the student’s participation in such trips.
	+ Religious holidays. Students are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays.
	+ Subpoena for court appearance.
	+ Military Orders
* It is the student’s responsibility to notify the instructor via email and provide a valid excuse for late/missed work.
* To review the Auburn University Attendance Policy, visit: <https://sites.auburn.edu/admin/universitypolicies/Policies/PolicyonClassAttendance.pdf>

***Incompletes and Withdrawals***

* Grades associated with incomplete coursework or withdrawal from class will be assigned in strict conformity with Auburn University policy. To review the Auburn University Bulletin, visit: <https://bulletin.auburn.edu/Policies/Academic/>
* If you wish to drop this course, you may do so by the 15th class day with no grade assignment. From the 16th class day to mid-semester a W (withdrawn-passing) grade will be recorded in your transcripts. After this period withdrawal from the course will only be granted under unusual circumstances and must be approved by the Dean of the College of Education. Students who withdraw from the course between the 6th class day and the 15th class day will pay a course drop fee of $100.
* Note that the incomplete grade (IN) policy is in effect. The policy requires that students complete a form requesting that an IN grade be assigned. If this form is not completed and given to the instructor of the class, a grade will be assigned with a score of zero (0) for work that has not been completed and turned in by the time the instructor reports grades. To be eligible for a grade of IN, the student must have completed and passed more than half of all class assignments/exams for the semester.

***Academic Misconduct***

* The Department of Educational Foundations Leadership and Technology recognizes university policy regarding academic misconduct. Violations include, but are not limited to plagiarism, unauthorized assistance during examinations, submitting another’s work product as your own, using another’s words as your own without appropriate citation, sharing unauthorized materials with another that contain questions or answers to examinations, altering or attempting to alter assigned grades.
* **In accordance with Auburn University policy regarding academic misconduct, students may be subject to several sanctions upon violations of the Student Academic Honesty Code.** See the Tiger Cub publication for the current year for specifics regarding academic misconduct as well as student’s rights and responsibilities associated with the Code.

***Plagiarism***

* Plagiarism is “the practice of taking someone else’s work or ideas and passing them off as one’s own” (Merriam-Webster's Online Dictionary, 2022).
* For more information and resources to safeguard against plagiarism, visit The Auburn University Miller Writing Center website: <https://auburn.edu/academic/provost/university-writing/resources/?tag=Plagiarism>

***Special Accommodations***

Students who need special accommodations in class, as provided for by the American Disabilities Act, should arrange a confidential meeting with the instructor during office hours the first week of classes — or as soon as possible if accommodations are needed immediately. To set up this meeting, please contact the instructor by e-mail. Students should submit an Accommodation Memo and Instructor Verification Form using AU Access. Students are responsible for following-up with the instructor about whether she received an email copy of these forms. If a student does not have these forms but needs accommodations, he/she can make an appointment with the Office of Accessibility -1228 Haley Center, (334) 844-2096(V/TT). You must bring a copy of your Accommodation Memo and an Instructor Verification Form to the meeting.

Additional services are available on the website for Student Affairs, including Student Counseling & Psychological Services. ([http://wp.auburn.edu/scs](http://wp.auburn.edu/scs/))

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course or others is urged to contact Auburn’s Basic Needs Center for support at [https://aub.ie/basicneeds Links to an external site.](https://aub.ie/basicneeds) Furthermore, please notify the instructor if you are comfortable in doing so as this will allow the faculty member to connect you with any other known resources.

***Auburn University-Title IX***

Auburn University is committed to providing an environment that is free from discrimination and harassment based on protected class. If you believe you have been the victim of harassment or discrimination based on race, color, religion, national origin, disability, age, or sex (including sexual orientation, gender identity, and gender expression), we encourage you to report it. If you report sexual assault or sexual misconduct to a faculty member, the faculty member is obligated to notify the University’s Title IX Coordinator about the basic facts of the incident. For more information about your Title IX reporting and resource options at Auburn University, please go to: [www.auburn.edu/titleix](http://www.auburn.edu/titleix).

**EMERGENCY CONTINGENCY:** If normal class activities are disrupted due to illness, emergency, or a crisis situation the syllabus and other course plans and assignments may be modified to allow for completion of the course. If this occurs, an addendum to your syllabus and/or course assignments will replace the original materials.

**COURSE REQUIREMENTS**

* Class attendance
* Weekly Canvas login and participation in learning modules
* Review literature and other materials posted on Canvas
* Complete all lab exercises
* Complete all examinations
* Complete all reflect and discuss assignments

**GRADING & EVALUATION PROCEDURES**

It is very important that students submit work on time, or they will find it very difficult to catch up. As previously noted, all work must be submitted by 11:59 PM CST on the date noted on the course schedule. If you experience technical difficulties submitting your assignment near the deadline, please consult Canvas help resources located in the “Help” tab on the left navigation panel.

*Please plan to submit work well in advance of the due date/time to prevent missing a deadline due to encountering technical difficulties.*

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| --- | --- | --- |
| **Course Requirements** | **Point Value Total** | **% of total Grade** |
| Lab Assignments (20 points each) | 100 points | 25% |
| Mid-term Exam  | 100 points | 25% |
| Final Exam | 100 points | 25% |
| Reflect & Discuss Assignments  | 100 points | 25% |
| **TOTAL:** | **400 points** | **100%** |

Grades will be calculated based on the percentage of points earned out of the total points possible*.* I do not round final grades.

**The following grading scale will be used:**

* 90% - 100% (360 - 400 points) = A
* 80% - 89.99% (320 - 359.99 points) = B
* 70% - 79.99% (280 - 319.99 points) = C
* 60% - 69.99% (240 - 279.99 points) = D
* Below 60% (≤ 239.99 points) = F

**Lab Assignments (25%)**

**There will be five lab assignments.** These assignments will focus primarily on the application of statistical software. The instructor will demonstrate each application in SPSS during class time prior to the lab assignment. You are welcome to work in groups of 2 or 3 on lab assignments – just identify the group members on your assignment when you submit it by including names at the top of your work.

**Exams (50%)**

**There will be two exams: a mid-term exam (25%) and a final exam (25%).** Exams will assess learning and application of measurement and research design. You are encouraged to use materials from class (handouts, readings, etc.) as you work on these exams, but you must complete the exams individually.

**Reflect & Discuss Assignments (25%)**

**There will be five reflection & discussion assignments.** These assignments will support application and reflection on course materials andare to be completed individually.

**HONOR CODE:** All portions of the Auburn University Honesty Code will apply in this class, as found in the Student Policy eHandbook. To review, visit <https://sites.auburn.edu/admin/universitypolicies/Policies/AcademicHonestyCode.pdf>

In addition, each student will be required to read and sign the following Honor Pledge when submitting exams.

**Honor Pledge: *On my honor as a student, I have neither given nor received assistance on this assignment.***

**TIPS FOR SUCCESS**

* Become familiar with the syllabus and keep track of due dates.
* Check Canvas regularly (suggest a minimum of 2 times per week).
* Schedule dedicated time for this class every week, without interruption.
* Read materials and attend/watch lectures prior to completing assignments.
* Work with a partner or small group on lab assignments.
* Adhere to all course and university policies.
* Challenge yourself to think critically.
* Practice professionalism, integrity, and responsibility in completing assignments and in communication with all participating in this course.
* Adhere to the ***Honor Pledge*** when submitting exams.
* Be on the lookout for statistics in your everyday life (e.g., when reading articles for other classes, weather reports, budgeting, current events, etc.).
* Submit assignments early to avoid technical difficulties at time of upload.
* Communicate with your instructor early and often about any challenges.

**COURSE SCHEDULE (Tentative Schedule - Subject to Change)\***

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| --- | --- | --- |
| **Class Dates** | **Topic(s)** | **To do:** |
| **Week 1 & 2 Combined:** 1/17 | Syllabus Introduction to Statistics | 1. Read the syllabus
2. Review course resource materials
3. Secure access to SPSS software
4. Read Salkind & Frey, Chap 1
5. Introduction to Statistics Lecture
6. SPSS Basics Lecture
7. **Reflect & Discuss # 1 DUE by Mon, 1/23**
 |
| **Week 1 & 2 Combined:** 1/17 | Frequency DistributionCentral Tendency & Variability | 1. Read Ross & Shannon, Chaps 1-3
2. Read Salkind & Frey, Chaps 2, 3
3. Descriptive Statistics Lecture
4. Descriptive Statistics SPSS practice
5. **Lab # 1 DUE by Mon, 1/23**
 |
| **Week 3:**1/24 | Probability Normal Distributionz-score | 1. Read Ross & Shannon Chap 4
2. Read Salkind & Frey, Chaps 8, 10
3. Probability & z score Lecture
4. Probability & z score SPSS practice
 |
| **Week 4:**1/31 | Hypothesis Testing & z-test | 1. Read Ross & Shannon Chap 5
2. Read Salkind & Frey, Chap 7
3. Hypothesis Testing Lecture
4. **Lab #2 DUE by Mon, 2/6**
 |
| **Week 5:**2/7 | Review hypothesis testing & z-testOne-Sample t-test | 1. Review Salkind & Frey, Chap 7
2. Review Ross & Shannon, Chap 4
3. Hypothesis & z-test review Lecture
4. One-sample t-test Lecture
5. One sample t-test SPSS practice
6. **Reflect & Discuss #2 DUE by Mon, 2/13**
 |
| **2/14 - No Class – Dr. Langham Out of Office**  |
| **Week 6 & 7 Combined:**2/21 | Two-sample t-testRelated samples t-testConfidence Intervals | 1. Read Ross & Shannon, Chaps 5
2. Read Salkind & Frey, Chaps 11
3. Two-sample t-test Lecture
4. Two-sample t-test SPPS practice
5. **Lab #3 DUE by Mon, 2/20**
 |
| **Week 6 & 7 Combined:**2/21 | Two-sample t-test cont.Related samples t-test | 1. Review Ross & Shannon, Chaps 5
2. Read Salkind & Frey, Chap 12
3. Related samples t-test Lecture
4. Related samples t-test SPSS practice
 |
| **Week 8: 2/28-3/5****Mid-term Exam DUE by Sunday, 3/5 by 11:59 PM CST** |
| **Week 9: 3/6-3/10****SPRING BREAK** |
| **Class Dates** | **Topic(s)** | **To do:** |
| **Week 10:**3/14 | One-way ANOVAwith two levels | 1. Read Ross & Shannon, Chap 6
2. Read Salkind & Frey, Chap 13
3. One-way ANOVA pt.1 Lecture
4. One-way ANOVA pt. 1 in SPSS practice
5. **Reflect & Discuss # 3 Due by Mon, 3/20**
 |
| **Week 11:**3/21 | One-way ANOVA with three levels | 1. Review Ross & Shannon, Chap 6
2. Review Salkind & Frey, Chap 13
3. One-way ANOVA pt. 2 Lecture
4. One-way ANOVA pt. 2 in SPSS practice
5. **Lab # 4 Due by Mon, 3/27**
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| **Week 12 & 13 Combined:**3/28 | Review one-way ANOVAIntroduce Factorial ANOVA  | 1. Read Ross and Shannon, Chap 7
2. Read Salkind & Frey, Chap 14
3. Factorial ANOVA pt. 1 lecture
4. Factorial ANOVA pt1. SPSS practice
 |
| **4/4 – No Class – Dr. Langham Out of Office** |
| **Week 12 & 13 Combined:**3/28 | Within Subjects ANOVA Design  | 1. Read Ross and Shannon, Chap 8
2. Within Subjects ANOVA Lecture
3. Within Subjects SPSS practice
4. **Reflect & Discuss #4 DUE by Mon, 4/10**
 |
| **Week 14:**4/11 | Mixed Design ANOVA | 1. Read Ross and Shannon, Chapter 9
2. Mixed Design ANOVA Lecture
3. Mixed Design ANOVA SPSS practice
4. **Lab #5 DUE by Mon, 4/17**
 |
| **Week 15:**4/18 | Binomial Test Chi-Square | 1. Read Ross & Shannon Chap 16
2. Read Salkind & Frey, Chap 17
3. Chi-square Lecture
4. Chi-square SPSS practice
5. **Reflect & Discuss #5 DUE by Mon, 4/24**
 |
| **Week 16: 4/25-4/28****Final Exam DUE by 4/28, 11:59 PM CST** |

**\***Any changes to the syllabus and/or schedule will be announced on Canvas. Students are responsible for being aware of any changes made.