INCM 9102 (Quantitative Methods)

Kennesaw State University
Radow College of Humanities and Social Sciences
The School of Conflict Management, Peacebuilding, and Development

Professor: Dr. Kristina Hook
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Class Time and Location: Wednesdays, 12:30 to 3:15pm, School of Conflict Management 117
Office: #205, 3201 Campus Loop Road
Office Hours: Wednesdays, 11:30am to 12:30pm and by appointment.
Graduate Teaching Assistant: Mohamed Hashi (mhashi@students.kennesaw.edu)
TA Office Hours: Monday (virtual), 11:00am to 12:00pm; Wednesdays (in-person), 11:30am to 12:30pm and by appointment (virtual)
Face-to-Face Course, 3 credits / Pre-Requisite: INCM 9101

Course Description: After successfully completing this course, students will be able to interpret, critically interrogate, produce, and consume quantitative research across a variety of discipline, with a particular focus on quantitative approaches in the field of peace and conflict management. This course is grounded in the instructor's pedagogical goal to be as practical and applied as possible. Students will learn the theoretical underpinnings of various statistical approaches and tools, yet will spend the majority of time learning to harness these tools to further their research trajectories. In addition to mastering statistical software (IBM SPSS), students will gain proficiency in knowing when, how, and what type of statistical approach is appropriate as well as how to interpret these tools in applied research settings.

Per the program catalog, "this course will focus on quantitative techniques including descriptive and inferential statistical analyses such as regression, correlation, hypotheses testing, analysis of variance, and sampling techniques. Students will apply these techniques using statistical software packages."

Course Goals: My goals for each student are to provide you with a thorough, applied knowledge of when, how, and why social scientists conduct and use quantitative approaches in research. The best way to gain mastery in the quantitative approaches that we will study together is to remain committed each week to building your knowledge incrementally and steadily. Over the course of this semester, you will gain experience in research design, quantitative theory and application, hypothesis development, data collection, data analysis, research reporting, and the limits of various research tools.

You will achieve these learning goals if you remain active and engaged in the learning process, working along with your instructor, the Graduate Teaching Assistant (TA), and fellow classmates in a supportive learning environment. In order to succeed in this course and gain proficiency in these topics, you will be responsible for maintaining ownership of your own learning process. In addition to the required components of this course, each week's class materials will present you with a variety of opportunities to check your understanding (e.g., additional practice exercises, self-tests, other examples of quantitative studies), with both the correct answers and explanations available online. Working through these exercises alone or with peers will deepen your expertise in ways that will pay divided not only in this class but throughout your emerging social scientific careers. In this course, you will also apply your

developing quantitative skills by completing a project on a peace and conflict-related subject of your choosing. This project will culminate in a research paper that you can submit to a scholarly conference or peer-reviewed academic journal, with your final presentation on the last day of class also serving as a scholarly conference presentation simulation. In designing this course, I have structured our activities and learning to give you opportunities to hone your quantitative research skills with applied opportunities to practice creative and critical thinking in a constructive, team-oriented setting,

Learning Objectives: Upon successfully completing this course, students should be able to:

General Learning Objectives

- Understand and explain social scientific criteria of validity and reliability
- Locate, apply, and interpret relevant empirically-based sources for a given research topic
- Understand and critique scholarly literature
- Demonstrate mastery of statistical software to perform data analysis, specifically IBM SPSS (SPSS)
- Apply critical reasoning and logic to social science questions

Quantitative Literacy

- Recognize, interpret, and explain statistical formulas, notations, and concepts
- Understand and explain guiding general guiding principles and undergirding logic in statistical theory
- Conduct, interpret, and explain statistical tests for differing research questions
- Apply statistical approaches to natural and experimentally manipulated phenomena

Social Scientific Experimental Competency Objectives

- Apply their quantitative knowledge to social science questions, especially within international conflict management
- Design and conduct quantitative analyses of data
- Justify a selected quantitative approach as appropriate to a given research topic and question(s)
- Understand the potential and the interpretive limitations of various quantitative approaches for specific research questions
- Explain current debates regarding ethics and feasibility within modern statistics
- Comprehend, interpret, and explain advanced statistical techniques and methodologies within peace and conflict scholarly journals
- Design, carry out, and complete a quantitative research project

Professional Development and Communication Skills

- Effectively explain via written and oral communication quantitative approaches and techniques
- Demonstrate appropriate use of written language and statistical notation when summarizing quantitative research
- Complete a quantitative research project of sufficient quality to submit for a scholarly conference and/or peer-reviewed publication within the peace and conflict research field
- Demonstrate effective and engaging public presentations of their original research work

Required Readings and Homework:
As we will often work through problem sets and/or use SPSS during our class time, I strongly suggest bringing your course textbook and laptop with SPSS loaded to class each week.

The following materials are required for this course:

1.**Textbook:**
Fields, Andy. 2018. *Discovering Statistics Using IBM SPSS Statistics, 5th Edition*. London: Sage.
N.B. I *strongly* encourage you to purchase the 5th edition of this textbook as listed above, in order to ensure that you are best able to follow along with the material and datasets that we will use in this course.

2. **IBM SPSS** (statistical software) is required for this course. For INCM 9102, SPSS is provided as a **free download** through KSU. Students should be able to download the software through this application portal: https://apps.kennesaw.edu/portal/prod/app_uni_sso/menu/
**Please plan ahead and download this software asap in case the KSU system requires time to approve your application for software access.

3. **All other required readings AND assignments** will be posted on the course D2L page for this course (https://d2l.kennesaw.edu/).

***Resources for Extra Help and Practice:**
For those needing extra help beyond the class and professor's office hours, here are several websites:

- http://vassarstats.net/
- https://studymaths.co.uk/
- www.gcflearnfree.org/math
- www.mathsisfun.com

Students may access our textbook's accompanying website, which hosts a variety of problems sets, examples, and other suggestions for practicing: https://edge.sagepub.com/field5e

In addition, you may view the YouTube channel by our textbook author for a variety of related lectures on the topics we will cover in this class here:
https://www.youtube.com/c/ProfAndyField/featured

You can watch additional tutorials on using SPSS here:
https://www.youtube.com/watch?v=b163iBByycw&list=PL25257A24840423AE

Assignments

Quantitative Assignments: (4 assignments x 5% each, totaling 20% of your final grade)
Over the course of the semester, I will assign four quantitative assignments designed to help you practice and apply our course material (potential topics include research design, SPSS practice, graphing practice, hypotheses, correlation, and regression). Due dates for these assignments are listed in our course schedule below, with these assignments submitted to me via our course D2L website. I will not award partial credit for unexcused late submissions of these assignments. As a required component of this assignment, students must attend a minimum of 3 out of 4 practice labs held by the GTA outside of regular class hours. Students who do not attend 3 out of 4 sessions will not receive full credit for these assignments.

Mid-Term: Abstract and Data Analysis Plan (15% of your final grade)
In lieu of a midterm exam, you will submit an abstract, research topic (with hypotheses), and data analysis plan for your final paper. This assignment will allow me an opportunity to work with you to strengthen your final paper and quantitative approach well in advance of its final submission. Submitting this plan in advance is also an important component of determining the scope, approach, and parameters of statistical studies *in advance*, part of the ethical, transparency, and open science principles for quantitative work that we will discuss in this course. More details on the formal components of this assignment will be provided well in advance of the deadline.

Final Presentation: (15% of your final grade)
Concise, clear public speaking is also an important component of your professional development as a scholar-practitioner. As such, each student will be required to make a final presentation of their final paper. These final presentations will take place on the final class session. Although a successful presentation will require the near-completion of your final exam paper (as you will also include a PowerPoint presentation that include screenshots and visuals from your quantitative study), these presentations will take place the week prior to your submission of your final paper, allowing you time to incorporate the feedback of your peers into your poster. An unexcused absence for this final presentation day forfeits this grade.

Final Exam: Research Paper: (35% of your final grade)
For your final exam, each student will be required to submit an academic research paper reflecting your own original research. I strongly recommend that you work on a topic related to your dissertation and/or a subject of interest to your professional trajectory. Each paper should be a creative, robust research project that can be submitted for an academic conference and/or to a peer-reviewed academic journal upon successful completion of this course. Each paper must demonstrate quantitative competencies in the statistical tools must appropriate for your topic of study, as well as in using SPSS. More details on the specific required elements of your paper will be provided well in advance of the deadline.

Article Presentation (5%): During Week 7's session, each student must bring in a quantitative research article on a peace and conflict topic of your choosing (this may be an article that you are using for your final paper. Each student must come prepared to present an overview of this article, including the following elements: a summary, its methodological approach (strengths and

weaknesses, suggestions for additions to it from our course material), a results overview with your evaluation, remaining questions from the article, and steps for further study. An unexcused absence for this final presentation day forfeits this grade.

Class Participation: (10% of your final grade)
Class participation is essential to a successful learning quantitative methods learning experience (and grade outcome) in this course. Participation involves not just your physical attendance at our sessions but also a careful demonstration that you have critically engaged with the material, including by reading the required coursework *and* working through the practice exercises explained in detail in each reading. While I expect you to come to class with questions regarding the statistical material, a successful participation grade in this course is dependent upon your demonstration of engaged participation during class and preparation at home prior to each class.

Grading
UNLESS otherwise instructed, all assignments are to be emailed to me prior our class and lab time, **no later than 11:00am**, on the date that they are due. Your final research paper serves as your final exam as is due to me no later than your scheduled final exam window listed in the Course Schedule below.

**Each assignment should have your name, this course number, the date, and the title of the assignment in the upper left corner. Please save all assignments for email attachment as: Last Name_Title of Assignment (Course #). For emergency circumstances only: requests for extra time for an assignment must be emailed to the professor at least 24 hours before the assignment is due and are granted at my sole discretion.

Late assignments will be penalized. I will only accept late submissions of your midterm and your final exam paper with 5 points (out of 15 and 35 points respectively) dropped from your final grade for each 24-hour day that the assignment is late. I strongly encourage you to meet with me and discuss any concerns or questions you have with your assignment grade. Due to the short length of the term, however, these concerns or questions can only be address within two weeks after I have returned the assignment. My feedback will help you to evaluate your learning and progress in this course.

If you have a documented disability and are authorized to have special arrangements for assignments, please inform me at the beginning of the course.

I have high expectations from the students in my courses and grade accordingly. The grading scale I use is as follows: **A= 94-100, A- = 90-93, B+ = 87-89, B= 83-86, B- = 80-82, C+ = 77-79, C= 73-76, C- = 70-72, D = 60-69, F = under 60**. Grades ending with a decimal of .5 or greater will be rounded up to the next integer. I do not use a grading curve.

Grading Rubric:
A – Excellent: Mastery of course content at the highest level of attainment that can reasonably be expected. Over and above the expected standard. A distinguished result that is excellent with regard to the following aspects: theoretical depth, analytical ability, and independent thought.

B – Good: Strong performance demonstrating a high level of attainment. Meets expectations. A good result with regard to the above-mentioned aspects.

C – Satisfactory: An acceptable performance demonstrating an adequate level of attainment. Just below expectations. The result is of a satisfactory standard with regard to the above-mentioned aspects.

D – Poor: A marginal performance in the required exercises demonstrating a minimal passing level of attainment. Below expectations. The result satisfies the minimum requirements with regard to the above-mentioned aspects, but not more.

F – Fail: An unacceptable performance. The F grade indicates that performance in the required exercises has revealed almost no understanding of the course content. Well below expectations. The result does not meet the minimum requirements with regard to the above-mentioned aspects.

Tips for Effective Professional Writing and Research Organization

While we will focus on building your knowledge of quantitative theory and application in this course, you will submit several projects that rely on your ability to demonstrate effective professional writing within the social sciences. Successful students should also plan to submit this course's final paper to a scholarly conference and/or peer-reviewed journal, so submitting the strongest piece of academic writing that you can this semester is important in both the short and long-term. Here are some general tips for strong academic writing:

1. Establish a focus. A good paper/poster has a thesis, a central idea or claim that it is making, and it presents an argument supporting that thesis. You should be able to make an outline of your paper/poster, which will at the same time be the skeleton of the argument you are making. It is often helpful to write out the outline – in sentence form, not simply as a list of topics – before writing the paper or, at least, the final draft. A good way to think about your paper/poster is to ask yourself, "What do I want my readers to believe after they have read my paper/poster? What reasons can I offer them to think that? What ideas do I want my reader to remember the next day?" If you can answer these questions succinctly, you're off to an excellent start.

2. Title. The title should express the main idea or focus of your paper/poster, preparing your reader to see immediately what you are going to say, and why it is interesting. The best titles are informative *and* memorable.

3. Structure and organization. The paper/poster should have a clear structure, with an introduction presenting the central question or problem you are addressing, a body that sets out a logical development of the reasons and evidence you are offering, and a conclusion that ties the paper together. In many types of writing, it is often useful to provide section headings. The introduction should generally state your main thesis, and provide an overview of the structure of the argument, to make it easier for your reader to follow it. Think of your opening as a roadmap for the reader.

4. Take advantage of the University writing center for help on papers. Sessions with the Writing Center is a worthy investment of your time for this class and for the remainder of your career. The KSU Writing Center (http://writingcenter.kennesaw.edu/) helps students in all disciplines and at all levels to improve their written work. Experienced, friendly writing assistants work with you on topic development, revision, structure, research, documentation and citations, grammar, and more. For more information, visit the weblink above and schedule an

appointment.

Some specific guidance for this course:

1. Please NUMBER your pages when submitting assignments. Label each assignment word doc in the following way: [Last Name] _ [Assignment Name] (Quantitative Methods)

2. All quotations, paraphrases, and direct use of another's ideas (even if not quoted) MUST BE cited. You may use the academic citation style most common to your field in this course; students who are in doubt should use the Chicago Manual of Style 15th edition for citation and referencing. Go here for specific information: http://www.chicagomanualofstyle.org/tools_citationguide.html

3. Avoid common but egregious errors such as misuse *of too, to* or *two*; *there, they're*, or *their*; *its* or *it's*; *affect* or *effect*. Good writing habits are essential.

4. Do not use Wikipedia, Answers.com, or similar sources. These are unscholarly sources.

5. If you mean "men and women" or "he and she", say so. Don't assume that "man" or "men" refers to human beings generally. There are lots of ways of writing that avoid the awkwardness of, for example, saying "he or she" over and over again. For help, you might consult the Writing Center or guides such as *The Handbook of Nonsexist Writing* by Miller and Smith.

6. There are a number of excellent guides for good writing. Strunk and White *The Elements of Style* is a classic (a worthy investment for your home library!), especially for grammar and word usage. Their useful set of "principles of composition" is also helpful. Anthony Westeron's *A Rulebook for Argument* is a wellspring of advice for formulating and articulating arguments in a tight, logical way. Other recommendations include Joseph William's *Style: Toward Grace and Clarity*. He offers good advice for reworking awkward passages, using concrete principles, and addressing key writing challenges, like clarity, emphasis, cohesion, etc., with chapter on each of these.

Course Expectations and Other Policies

Attendance:

Displaying reliability is an essential component of graduate school performance. I will therefore take attendance at every class session. Attendance is mandatory. I will give you one 'life happens' absence during the semester, no questions asked, *provided we do not have in-person graded assignments that day*. If you miss a course with in-person, graded assignments due to a medical or psychological emergency that would prevent you from participating, you can make up the assignment after providing the instructor with documentation stating what dates were covered and a contact phone number to verify the emergency. To receive a final grade, make-up work must be completed within 1 to 2 weeks provided on the supporting documentation (depending on how much time was missed), or before the last day of class, whichever comes first. It is your responsibility to speak with me as soon as possible so that we can work together to get your caught up and on track to succeeding. It is also your responsibility to confirm in writing (via email) with me the specific make-up deadlines for any missed graded assignments.

In case of illness, please send me an email prior to class stating that you are ill and cannot participate in our session. If your illness is prolonged, you must appeal to the Office of Student

Affairs for those absences to be excused. More than three unexcused absences will result in the failure of this course. Frequent lateness will also be taken into account.

Electronic Communication:

Communication for this course will be sent to your official university email. It is your responsibility to read/check your official university email account. If you choose to forward university email to another off-campus account, faculty are *not responsible* for any undeliverable messages to your alternative personal accounts. "I didn't receive the email" is not a valid excuse for missing work or being unaware of changes to the syllabus and general course updates.

Special Needs (http://sds.kennesaw.edu/)

If you have a specific physical, psychiatric, or learning need and require accommodations, please let me know immediately in the early days of our semester so that your learning needs can be appropriately met. You will need to provide documentation of your disability to the disabled Student Support Services office to obtain a list of approved accommodations. Contact the disabled Student Support Services office by phone (470) 578-2666 or email (sds@kennesaw.edu) to make arrangements to submit documentation, register with the department, arrange accommodations, etc.

Office Hours:

I encourage you to participate in my office hours and our TA's office hours to discuss your questions/concerns, progress in class, or any issues that come up. If you cannot participate in my office hours, you can make an appointment at a time that suits us both. This is an opportunity for you to ask questions outside of class in a less formal setting. As regular application on your part of our course lectures and lab work, please expect me to ask detailed questions regarding the practice assignments available on each subject. Completing these assignments and bringing them to my office hours will allow me to identify precisely where you are struggling.

SCMPD Activities:

As a scholar-practitioner in training, I strongly encourage you to participate in the intellectual and social life of our broader SCMPD community. Networking and building collegial scholarly relationships provide invaluable training during your doctoral student career. The most successful doctoral students will use these opportunities to celebrate the achievements of your colleagues while receiving their support for your accomplishments. You can keep up with events and news on the SCMPB website (https://radow.kennesaw.edu/conflict/about/events.php) or Facebook page (https://www.facebook.com/ksuconflict).

Code of Conduct:

I expect all students to adhere to academic honesty following the tenets of the Kennesaw State University Codes of Conduct as found here: https://scai.kennesaw.edu/codes.php. This involves the solemn agreement to neither participate in or tolerate academic dishonesty. A violation of this code is serious and could result in a failing grade. See additional links below for further information.

Required Syllabus Statements:

Please always confirm the below language with what is posted on KSU's website, as any important changes are updated there, and these changes supersede any written language below.

All Federal, BOR and KSU Student Policies can be found here:
https://cia.kennesaw.edu/instructional-resources/syllabus-policy.php

KSU Student Resources can be found here:
https://cia.kennesaw.edu/instructional-resources/syllabus-resources.php

Student Rights (https://sds.kennesaw.edu/guidelines/student-rights-responsibilities.php)
Students are entitled to an environment that is conducive to learning and individual growth. To this end, students enrolling at KSU assume a responsibility to abide by the policies and regulations expressed in this section. By doing so, students may fulfill their responsibilities and enjoy the exercise of their own rights while also respecting the rights of others.

Student Conduct / Codes of Conduct (https://scai.kennesaw.edu/codes.php)
Students enrolled in a class are entitled to receive instruction free from interference by other students. Accordingly, in classrooms, laboratories, studios and other learning areas, students are expected to conduct themselves in an orderly and cooperative manner so that the faculty member can proceed with customary instruction. Respect other students' ideas and avoid being disruptive (e.g., leaving early, arriving late, talking while others are talking, eating food). If you find another student's behavior disruptive to your learning, please talk to me outside of class.

All students are responsible for knowing the information, policies and procedures outlined in the Kennesaw State University Codes of Conduct. The KSU Codes of Conduct include: the general Student Code of Conduct, the Residential Code of Conduct, and the Code of Academic Integrity. Kennesaw State University reserves the right to make changes to this code as necessary and once those changes are posted online, they are in effect. Students are encouraged to check online for the updated versions of all policies.

Academic Integrity and Honesty
The KSU Student Code of Conduct states: "Every KSU student is responsible for upholding the provisions of the Student Code of Conduct, as published in the Undergraduate and Graduate Catalogs. Section 5c of the Student Code of Conduct addresses the university's policy on academic honesty, including provisions regarding plagiarism and cheating, unauthorized access to university materials, misrepresentation/falsification of university records or academic work, malicious removal, retention, or destruction of library materials, malicious/intentional misuse of computer facilities and/or services, and misuse of student identification cards. Incidents of alleged academic misconduct will be handled through the established procedures of the Department of Student Conduct and Academic Integrity (SCAI), which includes either an "informal" resolution by a faculty member, resulting in a grade adjustment, or a formal hearing procedure, which may subject a student to the Code of Conduct's minimum one semester suspension requirement."

If I suspect that a student has committed plagiarism, even if it is his or her first time, the student will receive a zero on the assignment and an incident report will be filed with the Department of Student Conduct and Academic Integrity, along with other potential consequences for this conduct. For more information about plagiarism and prevention, go to www.plagarism.org.

KSU Sexual Misconduct
In accordance with federal and state law including, Title IX of the Education Amendments of 1972 ("Title IX") and Title VII of the Civil Rights Act of 1964 (Title VII), the University System of Georgia (USG), including Kennesaw State University, prohibits discrimination on the basis of sex in any of its education programs or activities or in employment. The USG is committed to ensuring the highest ethical conduct of the members of its community by promoting a safe learning and working environment. To that end, Kennesaw State University follows USG Board of Regents Policy Manual, Section 6.7. See https://equity.kennesaw.edu/titleix/title-ix.php.

Confidentiality and Privacy Statement
The Family Educational Rights and Privacy Act of 1974 (FERPA), as amended, is a federal law that sets forth requirements regarding the privacy of student records. FERPA governs the disclosure of student records maintained by an educational institution as well as access to those records. To protect your privacy, I am only able to discuss grades and grading with you personally or when receiving an email from an official Kennesaw State email address.

KSU Coronavirus (COVID-19) Information and Resources:
https://www.kennesaw.edu/coronavirus/index.php

Course Delivery
KSU may shift the method of course delivery at any time during the semester in compliance with University System of Georgia health and safety guidelines. In this case, alternate teaching modalities that may be adopted include hyflex, hybrid, synchronous online, or asynchronous online instruction.

Face Coverings
Based on guidance from the University System of Georgia (USG), masks are encouraged based on individual preference and assessment of personal risk. Disposable face coverings can be picked up at the Office of Emergency Management at Chastain Pointe on the Kennesaw campus and Norton Hall Police Precinct on the Marietta campus. Please email oem@kennesaw.edu if you have questions.

Class Schedule, Topics, and Assignment Dates
Reading assignments listed for each week should be read *before* coming to class. As you read, think through the topics listed for each week's session and come prepared to contribute to a lively class discussion in which everyone will be expected to participate and deepen their quantitative skills, and apply the readings. The majority of our class time will also involve a combination of lectures to thoroughly explain statistical theory and application as well as lab work and SPSS practice together.
N.B. When page numbers are not listed, I expect you to read the entire posted source (e.g., article, book chapter, etc.). As stated, students are expected to work along with the textbook to practice solving problems and using SPSS.

To view academic deadlines, including add/drop dates, please visit:
https://registrar.kennesaw.edu/

***Disclaimer:**
The instructor reserves the right to amend alter this syllabus during the semester as necessary. If the instructor amends or alters this syllabus, students will be properly notified of any changes.

Wednesday, August 17 (Week 1)

Topics: Introduction and overview of the course

- Why are quantitative methods useful for studying conflict and peace?
- How do they contribute to theory development? What are the pros and the cons?
- How do they contribute to applied conflict management policy and practice?
- How have quantitative methods been used to answer a focused peacebuilding question (case study: atrocity crimes in Darfur)?

Reading: Syllabus (Re-read this syllabus closely, and then read it again. Add relevant dates to your calendars now).
Regan, "Quantitative Methods in Peacebuilding"
Heldt, "Atrocity Crimes as a Disease: A Statistical Approach to Early Detection"
Also: Download datasets from textbook website for our practice throughout the semester: https://edge.sagepub.com/field5e/student-resources/datasets
Download IBM SPSS software (free for INCM 9102 students) here: https://apps.kennesaw.edu/portal/prod/app_uni_sso/menu/

Wednesday, August 24 (Week 2)

Topics: Doing Research Using Quantitative Methods

- Defining a question/ generating a theory
- Generating hypotheses and identifying variables (independent and dependent variables, measuring variables: validity, reliability, levels of measurement)
- Collecting data (correlational methods, experimental methods: randomization and counterbalancing)
- Describing the data you collect (central tendency: mean, mode, median; dispersion: variance, standard deviation, range, interquartile range; graphs: e.g., frequency distributions)

Readings:
Field, *Discovering Statistics Using IMB SPSS Statistics, 5th Edition (DSUS5)*, Chapter 1 (pages 1-46)
****Assignment #1 assigned via D2L course website**

Wednesday, August 31 (Week 3)

Topics: Statistical Theory

- The SPINE of Statistics
  - Standard Error
  - Parameters
  - Interval estimates (confidence intervals)
  - Null hypothesis significance testing
  - Estimation

Readings:
Field, *Discovering Statistics (DSUS5)*, Chapter 2 (pages 47-94)
****Assignment #1 due prior to lab & class submitted via D2L website**

Wednesday, September 7 (Week 4)

Topics: Current Thinking in Statistics and Combatting Bias in Scientific Research

- The Phoenix of Statistics
- EMBERS
    - Effect sizes
    - Meta-analysis
    - Bayesian Estimation
    - Registration, transparency and open science principles
    - Sense

Readings:

Field, *Discovering Statistics (DSUS5)*, Chapter 3 (pages 95-134)

****Assignment #2 assigned via D2L course website**

Wednesday, September 14 (Week 5)

Topics: IBM SPSS Statistics

- Introduction to SPSS, its capabilities, functions, and add-ons
- Importing, analyzing, and exporting data
- Data editor, SPSS viewer, and syntax editor

Readings:

Field, *Discovering Statistics (DSUS5)*, Chapter 4 (pages 135-176)

****Assignment #2 due prior to lab & class submitted via D2L website**

AND ****Assignment #3 assigned via DRL course website**

Wednesday, September 21 (Week 6)

Topics: Graphs and Data Visualization with SPSS

- The Art of Presenting Data
- SPSS Chart Builder
- Histograms
- Boxplots (box-whisker diagrams)
- Error Bar Charts
- Scatterplots

Readings:

Field, *Discovering Statistics (DSUS5)*, Chapter 5 (pages 177-224)

****Assignment #3 due prior to lab & class submitted via D2L website**

Wednesday, September 28 (Week 7)

Topics: IBM SPSS—More Practice

- Conflict management and peace science quantitative methods applications
- SPSS analysis and visualization practice: taking stock and more practice
- Student presentations: quantitative methodological analysis and visualization
- Student group work: SPSS to graph conflict data

Readings:

Rauchhaus, "Evaluating the Nuclear Peace Hypothesis: A Quantitative Approach"

Article you selected for your in-class presentation next week (quantitative methodology on peace and conflict topic)

Review any material as needed before midterm next week

****Student Article Presentations during Class (Week 7)**

Wednesday, October 5 (Week 8)

Topics: Bias and Assumptions

- Outliers
- Assumptions
- Additivity and linearity
- Normal distributions
- Homoscedasticity/homogeneity of variance
- Independence
- Reducing Bias

Readings:

Field, *Discovering Statistics (DSUS5)*, Chapter 6 (pages 225-280)

****Midterm DUE <u>before</u> class via email to Professor Hook** (Final Paper Abstract and Data Analysis Plan). Email Professor Hook a .doc or .docx version of your midterm, with the email subject line as specified in this syllabus: [Last Name]_Midterm (Quantitative Methods)

Wednesday, October 12 (Week 9)

Topics: Correlation

- Modelling relationships
- Data entry for correlation analysis
- Bivariate correlation
- Partial and semi-partial correlation
- Comparing correlations
- Calculating correlations
- Reporting correlation coefficients

Readings:

Field, *Discovering Statistics (DSUS5)*, Chapter 8 (pages 333-368)

****Assignment #4 assigned via DRL course website**

Wednesday, October 19 (Week 10)

Topics: The Linear Model (Regression), part 1

- The linear model (regression)
- Bias in linear models
- Generalizability
- Sample size and the linear model
- Fitting linear models
- Using SPSS to fit a linear model with one predictor
- Interpreting a linear model with one predictor
- The linear model with two or more predictors (multiple regression)

Readings:

Field, *Discovering Statistics (DSUS5)*, Chapter 9, part 1 (pages 369-401)

****Assignment #4 due prior to lab & class submitted via D2L website**

Wednesday, October 26 (Week 11)

Topics: The Linear Model (Regression), part 2

- Multiple regression
- Using SPSS to fit a linear model with several predictors
- Interpreting a linear model with several predictors
- Robust regression
- Bayesian regression
- Reporting linear models

Readings:

Field, *Discovering Statistics (DSUS5)*, Chapter 9, part 2 (pages 402-436)

Wednesday, November 2 (Week 12)

Topics: Comparing Two Means

- Categorical predictors in the linear model
- The t-test
- Assumptions of a t-test
- Comparing two means: general procedure
- Comparing two independent means using SPSS
- Comparing two related means using SPSS

Readings:

Field, *Discovering Statistics (DSUS5)*, Chapter 10 (pages 437-480)

Wednesday, November 9 (Week 13)

Topics: Moderation, Mediation, and Multicategory Predictors

- The *PROCESS* tool
- Moderation: interactions in the linear model
- Mediation
- Categorical predictors in regression

Readings:

Field, *Discovering Statistics (DSUS5)*, Chapter 11 (pages 481-518)

Wednesday, November 16 (Week 14)

Topics: Comparing Several Independent Means

- Using a linear model to compare several means
- Assumptions when comparing means
- Planned contrasts (contrast coding)
- *Post hoc* procedures
- Comparing several means using SPSS
- Output from one-way independent ANOVA
- Robust comparisons of several means
- Bayesian comparisons of several means
- Calculating the effect size
- Reporting results from one-way independent ANOVA

Readings:

Field, *Discovering Statistics (DSUS5)*, Chapter 12 (pages 519-572)

Wednesday, November 23: *NO CLASS—Thanksgiving Holiday and Fall Break*

Wednesday, November 30 (last day of class)

Topic: Final Paper Presentations

Readings: No readings in preparation for final presentation and exams

****Presentation PowerPoint due prior to class submitted via D2L website.**

****Final Presentations during Class.**

Final Exam Period: **Wednesday, December 7, 1:00-3:00pm**

****Final Paper Due NO LATER than during Exam Period:**

Email Professor Hook a .doc or .docx version of your final exam paper, with the email subject line and assignment as specified in this syllabus: [Last Name]_Final Paper (Quantitative Methods)