Instructor: Dr. Laura Siebeneck  
Office Location: Chilton 308F  
Semester: Spring 2022  
Office Hours: Tuesdays 10:00-2:00  
Course Schedule: Monday 6:00-8:50  
E-mail: laura.siebeneck@unt.edu  
Course Location: Chilton 240 (EOC Lab)

Prerequisite: None.

Course Description. This course introduces students to a variety of statistical analyses used in the study of disaster science. Focus is on the practical application of a variety of statistical analyses including bivariate analysis, correlation, and regression analysis techniques. Emphasis will be placed on the appropriateness of these techniques in research as well as the interpretation and presentation of these data analyses.

Course Objectives.

1. Ensure students are proficient in basic analytical techniques that will prepare them to understand and carry out research in the area of disaster science.

2. Provide students the knowledge, skillsets, can critical thinking skills necessary to design, carry out, and evaluate a quantitative research project.

3. Ensure that students are able to communicate -both written and verbally – their research design, operationalization of variables, analytical methods, results, and implications to both scientific and practitioner communities.

Required Text

Materials
Electronic calculator for doing simple calculations. No calculators that allow for information storage are permitted during the exams (e.g. TI-83, cell phones, iPad, etc.).

Software
All software necessary to complete the assignments is available in the lab as well as on other campus computer labs.

As of the beginning of the semester, SPSS can be downloaded from the UNT License Portal at: https://it.unt.edu/software-downloads
The SPSS Student Pack is also available for about $100 from various vendors online. SPSS has 14-day trials available for free online.

REMOTE ACCESS TO SPSS

Students will be able to access the General Access computer lab computers remotely. These machines have SPSS installed on them. You will want to access the Chilton 255 computers. Instructions for accessing the computers remotely can be found at: https://hps.unt.edu/node/4567

Storage Media
You will need to have a means for saving your data and work related to the computer-based lab assignments. A 1G thumb drive should provide plenty of storage.

Grading Breakdown

<table>
<thead>
<tr>
<th>Task</th>
<th>Total Points</th>
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<tbody>
<tr>
<td>Labs (4 labs worth 7.5 points each)</td>
<td>30 points</td>
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<tr>
<td>Exam 1</td>
<td>20 points</td>
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<tr>
<td>Exam 2</td>
<td>20 points</td>
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<tr>
<td>Project</td>
<td>25 points</td>
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<tr>
<td>Project Proposal</td>
<td>5 points</td>
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- Labs (4 x 7.5 points each, totaling 30 points)
  There will be four labs assigned throughout the semester in order to give students hands-on experience applying the material covered in the readings and lecture. These assignments will primarily be completed using SPSS. Students are strongly encouraged to work in pairs or small groups in order to complete these labs, however each person must turn in their own work. All assignments should be typed or legibly written and will be on the deadlines posted on the syllabus. Please turn in all work on Canvas. Late work will be accepted up to one week after the due date, however there will be 5% penalty for each day late. If you need an extension on the lab due to illness or other circumstances, please let me know ahead of time so we can make arrangements.
    - Lab 1 – Correlation Analyses (Due Feb 14th)
    - Lab 2 – Simple and Multiple Regression Analyses (Due Feb 25th)
    - Lab 3 – Dummy Variables and Logistic Regression (Due April 11th)
    - Lab 4 – Regression with Quadratic Functions and Chi-Square and Independent Samples T-Tests (Due April 22nd)

- Exam 1 (20 points) and Exam 2 (20 points)
  The first exam, March 7th, will cover the material presented in Weeks 1-6 (minus dummy variables). The second exam, April 25th, will cover the material presented Weeks 6-14. These exams will test your understanding of the main concepts covered in the course (readings, lectures, and labs). Exam contents will include, but are not limited to, short
answer, interpretation tasks, and practical application drawing from the lab assignments. More specific guidance pertaining to the exams will be provided in the review sessions the week before the exam. There will be no make-up exams without prior approval from the instructor. Make-up exams will be limited to only documented extenuating circumstances (as determined by the instructor) and the exam given may be different from the one given during class time.

- **Project Proposal (5 points).** Students will prepare and submit a short proposal outlining their plans and research question for the final project. Page 11 outlines the expectations for this proposal.

- **Project (25 points)**
  Students are required to complete an individual final project. This final project will focus on the application of a research method/technique covered in this course towards addressing a research question of interest of the student. The project is comprised of four parts: (1) project proposal (see above—graded separately), (2) identification/creation and cleaning of a dataset (3) analysis and written report, and (4) oral presentation. More information about this project is found on page 10 of this syllabus. All assignments related to the final project should be typed. Assignment not stapled will result in a 5% point deduction. Late work pertaining to any aspect of the project will be accepted up to one week after the due date, however there will be a 5% penalty for each day late. No e-mailed assignments will be accepted (unless noted otherwise or prior arrangements are made).

**Grading Scale**

A: ≥90 points  B: 89-80 points  C: 79-70 points  D: 69-60 points  F <60 points

**Course Policies**

- **Attendance**
  Because we only meet once a week, every class meeting is essential to your success. Therefore, perfect attendance is expected and strongly recommended. This course covers a significant amount of material, much of which is progressive and builds upon material covered in previous lectures. It may be difficult to catch up if you fall too behind. Students are expected to arrive to class on time and to stay until dismissed. If you need to arrive late or leave early, please inform me ahead of time. With that being said, you are not encouraged to attend class if you are ill (see COVID-19 guidance later in the syllabus). If you are absent, reach out to me and let’s make a plan to get you caught up.

- **Use of Computer, Laptops, and Cell Phones (and all other electronic gadgets) during Class:**
  The use of computers/laptops for purposes other than taking notes or completing labs (during lab time) is not allowed. Please keep cell phones on silent. There will be breaks given during class when you can check your messages, make calls, text, etc.
• Computer Log-In
Because there is a heavy lab component to this class, students need to make sure they have an active UNT user account. The instructor is not responsible for setting up and maintaining your account. If you have any issues, please contact the HPS computing Lab.

• E-mail
Students are welcome – and encouraged – to contact me using e-mail if they have any questions or would like to make an appointment. I generally respond to e-mail within 24 hours of receiving them, however, I may take more time to reply during holidays and weekends. I am always happy to answer any course related questions you may have.

All students are required to have an UNT e-mail address. All e-mail notifications pertaining to this class will be sent through those channels. In order words, if you do not have an account set up, you may miss out on important information. It is the responsibility of each student to have this account activated and current.

• Office Hours
This semester, I will be holding office hours in-person. However, I am happy to chat via zoom or by phone. Just feel free to email me with your availability and we will find a time to meet. Don’t ever hesitate to reach out if you need help or have questions.

• Student Behavior
Students are expected to conduct themselves in a professional manner at all times. Students are expected to be respectful to the instructor and their fellow classmates. Any behavior that is disruptive and/or disrespectful will not be tolerated. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Center for Student Rights and Responsibilities to consider whether the student violated the Code of Student Conduct. The university’s expectations for student conduct apply to all instructional forums, include university and electronic classrooms, faculty offices, e-mail, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at www.unt.edu/csrr.

• Cheating and Plagiarism
Cheating and plagiarism will not be tolerated. The UNT definition and policy on cheating and plagiarism is found at the end of the syllabus. Plagiarism.Org, expands this definition to include:
(1) Turning in someone else’s work as your own.
(2) Copying words or ideas from someone else without giving credit
(3) Failing to put a quotation in quotation marks
(4) Giving incorrect information about the source of a quotation
(5) Changing words by copying the sentence structure
(6) Copying so many words or ideas from a source that it makes up the majority of the work, whether you give it credit or not (i.e. copying and pasting from a variety of sources and calling it your own, even if you include citations.
Any student caught cheating or plagiarizing on their labs, test or final project will receive at a minimum an automatic "F" (zero) for the assignment and per University policy, the student may receive an automatic “F” for the course. In addition, any and all instances of plagiarism and cheating will be reported to the University for further disciplinary action.

- Student Perception of Teaching (SPOT)
  Students are strongly encouraged to complete the SPOT during the last two weeks of the semester. This is your opportunity to evaluate the instructor and I use the feedback to constantly update and improve my classes. Students can complete the on-line course evaluation though the MyUNT portal at https://my.unt.edu. Use the same log-in information (EUID and password) used to log into my.unt.edu.

HPS Computing Center (Chilton Hall 242, 270, 274, 388)

Student Computers: Currently enrolled students may login to the technology classroom student computers using their EUID and password. SPSS and SAS are installed on all student computers.

Disability Availability: Two students computers in each room have JAWS software for the visually impaired. The stations are higher than the other student stations to accommodate wheelchairs. A student who is registered with the UNT Office of Disability Accommodation that needs other accommodations should call 950-56503419 or e-mail thames@unt.edu

The classroom doors are locked and alarmed when not in use. The rooms are unlocked 10 minutes before classes begin. There are 2 surveillance cameras in each room.

Students may not stay in the lab after class. When class is dismissed, the instructor must ensure the students leave.

Students are not allowed to have food or drinks in Chilton 270, 274, or 388. Instructors are responsible for ensuring students follow this rule. Instructors may have a drink with a lid.

The “No Food or Drink” rule applies to all classes, including 3-hour and weekend courses.

Maintenance: The Chilton Hall computer labs are cleaned and sanitized nightly by lab assistants.

Lost & Found: Items found in the technology classroom are held in the operations manager’s office in Chilton 255. A photo id is required to claim items.

Questions or Comments may be directed to: Jackie Thames, Operations Manager, 940-565-3419, thames@unt.edu.
COVID-Related Policies

Face Coverings

UNT encourages everyone to wear a face covering when indoors, regardless of vaccination status, to protect yourself and others from COVID infection, as recommended by current CDC guidelines. Face covering guidelines could change based on community health conditions.

Attendance

Students are expected to attend class meetings regularly and to abide by the attendance policy established for the course. It is important that you communicate with the professor and the instructional team prior to being absent, so you, the professor, and the instructional team can discuss and mitigate the impact of the absence on your attainment of course learning goals. Please inform the professor and instructional team if you are unable to attend class meetings because you are ill, in mindfulness of the health and safety of everyone in our community.

If you are experiencing any symptoms of COVID-19 (https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html) please seek medical attention from the Student Health and Wellness Center (940-565-2333 or askSHWC@unt.edu) or your health care provider PRIOR to coming to campus. UNT also requires you to contact the UNT COVID Team at COVID@unt.edu for guidance on actions to take due to symptoms, pending or positive test results, or potential exposure.

Course Materials for Remote Instruction

Remote instruction may be necessary if community health conditions change or you need to self-isolate or quarantine due to COVID-19. Students will need access to a laptop, webcam and microphone to participate in fully remote portions of the class. Additional required classroom materials for remote learning include the ability to Zoom. Information on how to be successful in a remote learning environment can be found at https://online.unt.edu/learn

UNIVERSITY AND DEPARTMENT POLICIES

End of the Semester Evaluations

Required: Students can complete the Student Perception of Teaching (SPOT) the two weeks preceding the last week of the semester. This is your opportunity to evaluate the instructor. Students can complete the on-line course evaluation at my.unt.edu

POLICY ON CHEATING AND PLAGIARISM

Notice of this policy shall be given in all public administration classes each semester, and written copies shall be available in the public administration office.
Definitions

The UNT Code of Student Conduct and Discipline defines cheating and plagiarism “as the use of unauthorized books, notes, or otherwise securing help in a test; copying other’s tests, assignments, reports, or term papers; representing the work of another as one’s own; collaborating without authority with another student during an examination or in preparing academic work; or otherwise practicing scholastic dishonesty.”

Penalties

Normally, the minimum penalty for cheating or plagiarism is a grade of “F” in the course. In the case of graduate departmental exams, the minimum penalty shall be failure of all fields of the exam. Determination of cheating or plagiarism shall be made by the instructor in the course, or by the departmental faculty in the case of departmental exams.

Cases of cheating or plagiarism on graduate departmental exams, papers, theses, or dissertations shall automatically be referred to the departmental Curriculum and Degree Programs Committee. Cases of cheating or plagiarism in ordinary course work may, at the discretion of the instructor, be referred to the Curriculum and Degree Programs Committee in the case of either graduate or undergraduate students. This committee, acting as an agent of the Department, shall impose further penalties, or recommend further penalties to the Dean of Students, if they determine that the case warrants it. In all cases, the Dean of Students shall be informed in writing of the case.

Appeals

Students may appeal and decision under this policy by following the procedure laid down in the UNT Code of Student Conduct and Discipline.

POLICY ON DISABILITY ACCOMMODATION

The Department of Emergency Management and Disaster Science, in cooperation with the Office of Disability Accommodation, complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. Please present your written accommodation request during regular office hours before the 12th class day of regular semesters (4th class day of summer sessions).

POLICY ON LAPTOPS AND CELL PHONES IN THE CLASSROOM

The classroom setting at an institution of higher learning is intended to serve as a venue that permits the transfer of knowledge and facilitates the sharing of ideas. As such, it is imperative that any distractions from these stated objectives be avoided and kept to a minimum. Potential disruptions include modern electronic devices such as laptop computers and cell phones.

Students are allowed to take notes on personal laptop computers to enhance the learning process, but they should not activate their internet browsers during class or use computers for non-academic
purposes (as this diverts attention from the lecture/discussion for both the student using it and others nearby). Students should also avoid using cell phones to search the Internet or text while class is in session.

Exceptions to this policy will be at the discretion of the faculty only and may occur if searching the Internet is necessary to find additional information or facts related to the subject being covered on that particular day.

**POLICY ON STUDENT BEHAVIOR IN THE CLASSROOM**

Student behavior that interferes with an instructor’s ability to conduct a class or other students’ opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Center for Student Rights and Responsibilities to consider whether the student’s conduct violated the Code of Student Conduct. The university's expectations for student conduct apply to all instructional forums, including university and electronic classroom, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at [www.unt.edu/csrr](http://www.unt.edu/csrr).
<table>
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<tr>
<th>Date/Week</th>
<th>Course Outline</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Week 1 (Jan 24)</td>
<td>Introduction to course expectations&lt;br&gt;Introduction to Research Design&lt;br&gt;&lt;em&gt;Reading: Review Chapter 1*&lt;/em&gt;</td>
<td>*The reading can be completed after class</td>
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<tr>
<td>Week 2 (Jan 31)</td>
<td>Correlation Analyses&lt;br&gt;Pearson and Spearman Correlation&lt;br&gt;&lt;em&gt;Reading: Chapter 8- Measures of Correlation&lt;/em&gt;</td>
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<tr>
<td>Week 3 (Feb 7)</td>
<td>Simple Linear Regression&lt;br&gt;&lt;em&gt;Reading: Chapter 11-Regression Analysis&lt;/em&gt; (190-196)</td>
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<td>Week 4 (Feb 14)</td>
<td>Simple Linear Regression /Multiple Regression&lt;br&gt;&lt;em&gt;Reading: Chapter 11-Regression Analysis&lt;/em&gt; (all)</td>
<td>Lab 1 Due Feb 14th at 6pm</td>
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<td>Week 5 (Feb 21)</td>
<td>Multiple Regression Continued&lt;br&gt;&lt;em&gt;Reading: Chapter 11-Regression Analysis&lt;/em&gt;&lt;br&gt;Focus especially on Assumptions, Multicollinearity, Heteroskedasticity</td>
<td>Lab 2 Due Friday Feb 25th at 11:59pm</td>
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<td>Week 6 (Feb 28)</td>
<td>Dummy Variables / Data Coding*&lt;br&gt;Exam Review / Proposal Discussion&lt;br&gt;(*Material about dummy coding on Exam II)&lt;br&gt;&lt;em&gt;Reading: Meier et al (2015)- Chapter 21 (esp. pg 399) on Dichotomous Variables (Posted online)&lt;/em&gt;</td>
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<td>Week 7 (Mar 7)</td>
<td>Exam I</td>
<td><strong>MARCH 14-18- Spring Break (No Class 🎉)</strong></td>
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<td>Week 8 (Mar 21)</td>
<td>Introduction to Logistic Regression&lt;br&gt;&lt;em&gt;Reading: Chapter 12&lt;/em&gt;</td>
<td>Project Proposal Due March 21&lt;sup&gt;st&lt;/sup&gt; 6pm</td>
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<tr>
<td>Week 9 (Mar 28)</td>
<td>Logistic Regression II&lt;br&gt;&lt;em&gt;Reading: Chapter 12&lt;/em&gt;&lt;br&gt;&lt;em&gt;Reading: Berman and Wang (2012) 279-286 (Canvas)&lt;/em&gt;</td>
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<tr>
<td>Week</td>
<td>Topic</td>
<td>Reading</td>
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| Week 10 (Apr 4) | Regression Models with Quadratic and Logarithmic Functional Forms  
*Reading: TBD* | | |
| Week 11 (Apr 11) | Chi-Square Test  
Independent Samples T-tests  
*Reading: Chapter 7- Chi Square 139-146  
Reading: Chapter 7- Two-Samples Mean Test pg 128-131* | | Lab 3 Due  
April 11th  
6pm |
| Week 12 (Apr 18) | Exam Review - Presentation Tips - Project Work Day  
(Bring clean dataset to class) | | Clean Dataset  
Due  
Lab 4 Due  
Friday April 22nd at 11:50pm |
| Week 13 (Apr 25) | **Exam 2** | | |
| Week 14 (May 2) | Project Presentations I | | |
| Week 15 (May 9) | Project Presentations II (if needed)  
**Final Project Due Monday May 9th by 11:59 pm.** | | |

**Please note every effort will be made to adhere to this schedule. However, the instructor may change the schedule based on the needs of the class or if the University moves the course to a remote format. Any changes to this schedule will be announced in class and/or via e-mail/Canvas.**
Final Project Overview

Your final project will focus on the application of the regression methods and techniques covered in this course on a data set and research questions of interest to the student. The only restriction on project topic is that it needs to be a topic related to disaster science. This project is an opportunity for the student to gain experience formulating a short research/project proposal, collecting primary or secondary data, carrying out data coding and analysis, writing up research results, and presenting those findings to their peers. The regression methods students may use for this project include multiple regression, logistic regression, and models with quadratics and logarithmic functions. This project will include four deliverables: (1) Proposal, (2) Clean Data Set and Key, (3) Written Report, and (4) Professional Presentation.

Project Proposal (Worth 5 points) Due March 21st.

The project proposal is a 1-1.5 page (single-spaced) description of what you plan to do for your research project. In this proposal, you should include the following:

1. A description and justification of your research question. (What is your research question/s and why is it important/interesting? Provide a short background of your topic. For example, what has been done in terms of research in this area? The UNT Library and Google Scholar are great places to start researching topics.)
2. A description of your data (is it primary or secondary data? Where will you get it? Or how will you collect it? What variables do you want to collect? What is your dependent variable? What are your independent variables?)
3. A description of the research methods you intend to use and how this will help you to answer your research question. (I will use ___ technique because....)
4. A description of your expected results. (It is expected that the relationship between x and y will yield these results......In other words, what are your hypotheses? Feel free to use the hypotheses format used in class to guide these)
5. A timeline for completing this project. (What are your project benchmarks and when do you plan to complete it by?)

**Students must communicate with me prior to March 21st about their project topic.** The penalty for not discussing your project with me prior to submitting your proposal will be a 1 point deduction from the proposal grade.

Anytime before the deadline, please feel free to meet with me, email, or discuss ideas after class. I am happy to help you formulate your ideas and provide feedback about your project. You are encouraged to start this discussion with me early in the semester – it is never too early to start thinking about what you want to study.
Post Proposal Activities and Grades

The deliverable dates are as follows:

1. Clean Data Set and Key – E-mailed to me no later than 6pm April 5th*
2. Written Report – Due Friday, April 30th
3. Project Presentation – April 26th.

*Feel free to turn these in early – I am happy to review them and either grade them early so you can get ahead on the project, or I can give you feedback up until the deadline.

Clean Data Set and Key

Gathering data is an important task researchers undertake when conducting statistical analyses. Data can be gathered from a variety of sources and there are many data depository sites that you can utilize to help you complete your projects. Students may use primary data (data that you gather via observation or survey) or secondary data (data gathered by others e.g. their survey data, Census data, etc.). Students will be required to e-mail a clean data set to the instructor for approval. The dataset should include only the variables you are including in your data analysis. In addition, a key should be provided indicating to the instructor a description of the variables as well as identification of your dependent and independent variables. You must have a minimum of 30 observations (n= 30). Please do not wait until the last minute to find / collect data.

Written Report

Students are required to submit a final report in which they will describe their research project. The paper should be between 10-12 pages double spaced 12 pt. Times New Roman, 1-inch margins all around (2-3 pages can be tables/figures. References are not included in the page count). The format of the paper should be consistent with those used in scientific articles (Consult major journals for examples)

The structure of this paper should be organized as follows:

1. 150-200-word abstract. This abstract should include a problem statement, your research question/s, brief description of data analysis techniques, and your findings.

2. Introduction and Literature Review.
   a. Problem statement (what are the informational/research needs relating to your topic? What have other studies examined/found?)
   b. Research questions (This study will examine the relationship between x, y, and z.)
   c. State your hypotheses.
   d. Provide a review of previous research on your topic.
   a. Describe your data
      i. What is it?
      ii. Where did it come from/who collected it?
      iii. How was the data collected?
      iv. If there is a study area, describe it.
      v. Provide appropriate descriptive statistics (mean, median, etc.) *
   b. Describe the research methods you are using.
      i. What data analysis techniques are you using? Why?
      ii. Identify variables (label dependent and independent as appropriate)
      iii. Discuss steps taken in the analysis.

4. Results
   a. Provide appropriate descriptive statistics (mean, median, etc.) * (Descriptive stats can be presented either here or in the previous section)
   b. Present the results of the data analysis. Provide charts/plots/graphs (if appropriate)

5. Discussion/Conclusion
   a. Discuss your results.
      i. What did you find?
      ii. Is this what you expected? (Refer back to hypothesis)
      iii. Did you answer your question or did new questions arise?
      iv. What can you conclude from your analysis?
      v. Were there any limitations to your study?
      vi. What are the practical implications (if any) of your study?
   
   b. Future research directions
      i. What should future research examine?
      ii. What are the next logical steps in this research?

6. References
   a. List all references quoted in the text. The references should be used describing your research area/background justification as well as the methodology.

**A note about references:** The paper should contain a minimum 7 references, 5 of which should be from journal articles, books, or book chapters. Google Scholar is a great place to start searching journal articles as well as gather information and examples of research has been done in your area of interest. You can use this information not only to help you formulate your research questions, but to find examples of how the methods covered in this class have been applied in other studies.
Professional Presentation

At the conclusion of this project, students will be required to give a professional presentation highlighting their research question and findings. Each presentation will be between 8-10 minutes in length and should generally follow the format of the written paper. I will provide further guidance about presentation expectations and I will provide a presentation score sheet as we approach presentation dates. Please ensure your presentation does not exceed 10 minutes because we want to finish class on time. The project presentations are scheduled for May 2nd. Any unexcused absence on this day will result in a 10-point deduction off the student’s final presentation grade.

Lastly, depending on enrollment numbers, we may need to modify the presentation time in order to ensure we have enough time for everyone to present within the class period. If I need to shorten this time frame, I will let you know.

Project Grades

Your final grade for this project will consist of three components: (1) Dataset and key, (2) Written report, and (3) Professional presentation.

Dataset and Key: 5%
Written Report: 70%
In-Class Presentation: 25%