Course Number:	PAD 5381	Semester:	Spring 2020
CRN:	28631	Tuesdays:	6:00-8:50pm
Course Title:	Public and Nonprofit Program Evaluation		

Instructor: Dr. Eric Boyer
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Office Hours: Office Hours will be held virtually on blackboard. To join the office hours, log onto blackboard on the time of the office hours and click "virtual office hours." You can also "dial" into it at that time by calling the following: +1-571-392-7650 PIN: 204 571 8694. Once you log into blackboard during office hours, you can chat in the chat room, talk by audio, or talk by video in real time.

Tuesdays, 5-7:00pm (virtual), or please email me for a time to meet.

Course Description:

By the conclusion of this class, you will develop the ability to conduct program evaluations in the public and nonprofit sector; and to better manage or interpret the work of a third-party evaluator. Specifically, you will learn skills that you can apply to your work with a client to develop and execute an evaluation plan that meets their program needs. To accomplish this, you will learn techniques in designing quasi-experimental research designs, as well as techniques in data collection and data analysis. You will also learn how to develop data collection and analysis procedures for measuring program impacts in areas that are often difficult to measure (such as the impact of social and human services on clients and communities); as well as techniques for utilizing program evaluation in strategic planning.

My goal for this course is to examine a number of evaluation practices that will lead to more effective public and nonprofit services.

Student Learning Objectives:

You will learn how to:

- Develop program logic models;
- Develop utilization-oriented evaluation questions;
- Design clear and useful data collection instruments for use in evaluation work;
- Identify pertinent professional standards and ethical principles affecting specific dilemmas confronting evaluators in the field;
- Design implementation, outcome, and impact evaluations;

- Perform analyses of program data to measure program outputs and outcomes;
- Demonstrate competencies in qualitative and quantitative research methods;
- Demonstrate empirical findings through data visualization;
- Design user-oriented reports to convey evaluation findings; and
- Develop useful recommendations based on evaluation findings.

Course Format:

Recognizing that students have different learning and working styles, this course will utilize a variety of learning and teaching formats. The class will be instructed through an online format, utilizing video-recorded presentations, weekly assignments, virtual office hours, and selected written assignments. The professor will utilize the UTEP *Blackboard* system to distribute class materials.

Students are expected to deliver their work on time. If, due to illness or personal emergency, you believe your work will be late, you are advised to discuss the matter in advance with the instructor. Late work will normally be penalized at least one-third grade (e.g., from an A- to a B+). If you submit a paper assignment with text copied from another source without appropriate attribution, you will be penalized up to 50% of the final grade on the assignment and you may be required to re-do the assignment. Late work may be penalized at a higher rate if handed in after graded assignments have been handed back to the class.

Exceptions for late work penalties should be made before the assignment is due, by emailing the instructor. I will do my best to work with you if you have a personal or professional work emergency that you notify me of before an assignment deadline.

Diversity Statement

It is my intent that students from all diverse backgrounds and perspectives be well-served by this course, and that the diversity that the students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender identity, sexuality, disability, age, socioeconomic status, ethnicity, race, nationality, religion, culture and political ideology. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally, or for other students or student groups.

Policy on Meeting with Students and Reviewing Student Work:

Due to the online nature of much of this class, the preferred mode of communication with the instructor is email. My commitment to you is a response to any of your emails within 48 hours. If you and I deem that we need more interaction than we can achieve through email, then we will set up a phone call, skype session, or meet in person to work through any questions you have.

Course Requirements (Also please see grading criteria attached to this syllabus):

1. Class Participation (30%): This will involve reading all course material and contributing to the in-person class sessions, contributing to online sessions, interacting with your peers, and demonstrating your abilities to follow the instructions of assignments.
2. Website Summary (5%): Each student will be assigned one of the following organizations, and write a 300-word summary of the organization's work in evaluation. Your summary should address: 1) general information on the organization, 2) the types of evaluations that they perform, 3) the organization's intended audience, 4) the types of data and research designs that are most commonly adopted, and 5) the techniques the organization uses to translate the findings for practice (utilization). The list of possible organizations is below. You should bring a paper copy of your write-up to class, and be prepared to introduce the website to your peers in class.

    1. IES What Works Clearinghouse (education) http://ies.ed.gov/ncee/wwc/
    2. Office of Juvenile Justice and Delinquency Prevention Programs OJJDP Model Programs Guide http://ojjdp.ncjrs.gov/programs/mpg.html
    3. National Registry of Evidence–based Programs and Practices www.samhsa.gov/
    4. Agency for Healthcare Research and Quality, Effective Health Care http://www.effectivehealthcare.ahrq.gov/index.cfm/what-is-comparative-effectiveness-research1/
    5. The Campbell Collaboration http://campbellcollaboration.org/
    6. The Collaboration for Environmental Evidence http://www.environmentalevidence.org/

3. Program Evaluation Critique (15%): Through consultation with the instructor, identify a program evaluation conducted for a public or nonprofit program or organization. The critique should address central issues from the class, including a theory of change and research design standards. This assignment will be due via blackboard. The 2-4 page single-spaced (maximum) critique of the evaluation should be prepared in the following format:
    1) a brief description of the focus and findings;
    2) identification of the evaluation questions addressed;
    3) a brief summary of the research design and data collection methods used;
    4) a table that contains a systematic list of threats to the: measurement validity, measurement reliability, internal validity, and external validity. Note that the threats should be clearly presented, for example do not simply state "Hawthorne Effect," but clarify how/why that threat occurred; AND
    5) the threats should be labeled as those the authors acknowledged and addressed; threats the authors acknowledged but did not address; and those the authors did not acknowledge.

    Please see a good example on Blackboard to emulate.

You can find a sample evaluation to critique for this assignment at the following websites, or you may contact a local organization to request a copy of one of their *open-access* evaluations. You should email the instructor for approval of your selected program for the critique before you conduct it. You should select only an evaluation that is a summative evaluation, with a logic model and evaluation questions.

http://www.eval.org/p/cm/ld/fid=78

http://www.urban.org/research

https://www.mathematica-mpr.com

4. Final Course Project – Developing an Applied Program Evaluation or Applied Evaluation Proposal (50%): In consultation with the instructor, each person will develop a proposal for a program evaluation OR an evaluation for a local organization (see Appendices). You will not need to interface with this organization, but you should conduct some web research on the nature of the program or organization in developing an evaluation proposal for them. You will be responsible for choosing your own project and determining whether to form a team with other students or work by yourself. You will be responsible for gathering appropriate information for the organization to develop a logic model, so you should determine if you have enough information to select that project. If you perform the evaluation of a program, you will work with data provided by the instructor. This assignment will include: a draft project proposal (1-2 paragraphs explaining whether you are doing an evaluation proposal or evaluation, the program you will evaluate, your evaluation questions, and your partners) (5%), your draft logic model for review (5%), your draft design matrix for review (5%), your evaluation presentation (10%), and a final 10-15 page paper (single-spaced) on your evaluation or evaluation proposal (25%). ***A guide for the final paper is included at the end of the syllabus.***

Required Reading (for purchase):

Newcomer, Kathryn E., Hatry, Harry P., & Wholey, Joseph S. (2015). *Handbook of Practical Program Evaluation*. San Francisco, CA: Jossey-Bass. ISBN: 1118893603.

Optional Material (not required for purchase):

Shadish, William R., Thomas D. Cook, and Donald T. Campbell. 2002. *Experimental and Quasi-Experimental Designs*. Boston: Houghton Mifflin Co.

Evergreen, Stephanie D. H. 2017. *Effective Data Visualization: The Right Chart for the Right Data*. Thousand Oaks, CA: Sage.

Other required and recommended material not in the book required for purchase will be available on *Blackboard* or handed out in class.

I. COURSE INTRODUCTION – January 21, 2020

Coursebook: Newcomer, Hatry, and Wholey (2015)
CHAPTER 1 – Planning and Designing Useful Evaluations
CHAPTER 5 – Performance Measurement

Materials on Blackboard:
American Evaluation Association Evaluation Guiding Principles

Key Questions to Keep in Mind in Reading the Material:
1) What is program evaluation?
2) Where does evaluation take place and who conducts evaluation?
3) How do current performance measurement efforts relate to program evaluation?
4) What the connection between evaluation and evidence-based decision-making?

II. SCOPING EVALUATIONS – January 28, 2020

Coursebook: Newcomer, Hatry, and Wholey (2015)
CHAPTER 2 – Analyzing and Engaging Stakeholders
CHAPTER 3 – Using Logic Models

Materials on Blackboard
Kellogg Foundation. 2004. Logic Model Development Guide: Using Logic Models to Bring Together Planning, Evaluation, and Action. Battle Creek, MI: Kellogg Foundation.

Key Questions to Keep in Mind in Reading the Material:
1) What pre-design steps are desirable for the evaluator to take?
2) What role can the evaluator play in program development and design?
3) What is the guidance provided to evaluators by the AEA professional standards?
4) What is the program theory? How can it be developed and refined?
5) What role should staff and external stakeholders play in evaluation?

III. EVALUATION DESIGN – February 4, 2020 (ONLINE)

Coursebook: Newcomer, Hatry, and Wholey (2015)
CHAPTER 6 – Comparison Group Designs
CHAPTER 7 – Randomized Controlled Trials

Materials on Blackboard

Shadish, William R., Thomas D. Cook, and Donald T. Campbell. 2002. *Experimental and Quasi-Experimental Designs*. Boston: Houghton Mifflin Company. CHAPTER 4: Quasi-Designs that Lack Controls or Pretest & CHAPTER 5: Quasi-Designs with Controls and Pretests

Key Questions to Keep in Mind in Reading the Material:
1) What are the commonly used research designs to measure program outcomes?
2) What are the differences between one-shot designs, pretest-posttest designs, and interrupted time series designs?
3) What are the considerations in selecting a design to evaluate program impact?
4) How do the evaluators weigh the tradeoffs in various designs?
5) What strategies are available for controlling or ruling out various rival explanations?

IV. EVALUATION GOALS: ADDRESSING CAUSAL INFERENCE AND DISCOVERY – February 11, 2020
DUE: Website Summary

Coursebook: Newcomer, Hatry, and Wholey (2015)
CHAPTER 4 – Exploratory Evaluation

Materials on Blackboard
Gerber, Alan S., and Donald P. Green. 2012. *Field Experiments: Design, Analysis, and Interpretation*. New York: W. W. Norton & Company, Inc. CHAPTER 1: Introduction

Murnane, Richard J., and John B. Willett. 2011. *Methods Matter: Improving Causal Inference in Educational and Social Science Research*. Oxford: Oxford University Press. CHAPTER 3: Designing Research to Address Causal Questions

Key Questions to Keep in Mind in Reading the Material:
1) What are the purposes of deductive and inductive reasoning?
2) How does the maturity of the program influence design decisions?
3) What are the challenges of determining causal inference with human subjects research?
4) What are guiding principles in developing causal inference?

V. THREATS TO VALIDITY, GENERALIZABILITY, RELIABILITY, AND IMPLEMENTATION – February 18, 2020 (ONLINE)

Coursebook: Newcomer, Hatry, and Wholey (2015)
CHAPTER 26 – Pitfalls in Evaluation

Materials on Blackboard
Kathryn Newcomer, "Threats to Validity and Reliability"

JJEC. 2003. Evaluability Assessment: Examining the Readiness of a Program for Evaluation. Washington, DC: Juvenile Justice Evaluation Center (JJEC).

Newcomer's Guide for An Evaluation Design Matrix

Key Questions to Keep in Mind in Reading the Material:
1) How can you tell a good evaluation plan from a bad one?
2) How should feedback be incorporated in an implementation study?
3) How should an implementation study be linked with an outcome study?
4) What is evaluability assessment? What are the steps? How can it be used to guide evaluation? How can it be used as a management tool?
5) What are the most common threats to measurement reliability, internal validity and external validity?

VI. DATA COLLECTION: ARCHIVAL DATA – February 25, 2020 DUE: Evaluation Critique

Coursebook: Newcomer, Hatry, and Wholey (2015)
CHAPTER 13 – Using Agency Records
CHAPTER 18 – Using the Internet

Materials on Blackboard
GAO. 2009. Program Evaluation: A Variety of Rigorous Methods Can Help Identify Effective Interventions. In *Report to Congressional Requesters*. Washington, DC: United States Government Accountability Office.

Key Questions to Keep in Mind in Reading the Material:
1) What is involved in planning data collection and analysis?
2) What are the advantages of archival data for the purposes of evaluation?
3) What procedures can enhance validity and reliability in measurement?

VII. DATA COLLECTION: PERCEPTUAL DATA – March 3, 2020 (ONLINE)

Coursebook: Newcomer, Hatry, and Wholey (2015)
CHAPTER 14 – Using Surveys
CHAPTER 19 – Semi-Structured Interviews
CHAPTER 20 – Focus Group Interviewing

Materials on Blackboard
GAO. 2017. Annual Agency-Wide Plans Could Enhance Leadership Support for Program Evaluations. Washington, DC: Government Accountability Office (GAO).

Key Questions to Keep in Mind in Reading the Material:
1) What is involved in planning data collection and analysis?

2) What are the advantages of perceptual data for the purposes of evaluation?
3) What data collection techniques can assist in capturing perceptual data?
4) What is the difference between inductive and deductive reasoning?

VIII. QUALITATIVE DATA ANALYSIS & REPORTING – March 10, 2020

<u>Coursebook: Newcomer, Hatry, and Wholey (2015)</u>
CHAPTER 8 – Conducting Case Studies
CHAPTER 22 – Qualitative Data Analysis

<u>Materials on Blackboard</u>
George, & Bennett. (2004). *Case Studies and Theory Development in the Social Sciences*. Cambridge and London: MIT Press.
CHAPTER 3: The Method of Structured, Focused Comparison

Evergreen, Stephanie D. H. 2017. *Effective Data Visualization: The Right Chart for the Right Data*. Thousand Oaks, CA: Sage.
CHAPTER 8: When the Words Have the Meaning: Visualizing Qualitative Data

Key Questions to Keep in Mind in Reading the Material:
1) How does qualitative data inform our understanding of programs?
2) How can qualitative data complement quantitative data?
3) What are principles for mix-method research designs?

SPRING BREAK – March 17, 2020

IX. DATA VISUALIZATION – March 24, 2020
DUE: Evaluation Project Proposal

<u>Materials on Blackboard</u>
Evergreen, Stephanie D. H. 2017. *Effective Data Visualization: The Right Chart for the Right Data*. Thousand Oaks, CA: Sage.
CHAPTER 3: How Two or More Numbers are Alike or Different: Visualizing Comparisons
CHAPTER 7: How this Thing Changes when that Thing Does

Cairo, Alberto. 2016. *The Truthful Art: Data, Charts, and Maps for Communication 1st Edition*. Berkeley, California: New Riders.
CHAPTER 8: Revealing Change
CHAPTER 9: Seeing Relationships

Key Questions to Keep in Mind in Reading the Material:
1) What types of comparisons do I need to draw from my data?
2) What are key lessons for communicating data results effectively?
3) What does it mean to develop stand-alone visuals?
4) How does visualization relate to organizational strategy?

X. QUANTITATIVE DATA ANALYSIS AND REPORTING – March 31, 2020

Coursebook: Newcomer, Hatry, and Wholey (2015)
CHAPTER 23 – Using Statistics in Evaluation

Materials on Blackboard
Shadish, William R., Thomas D. Cook, and Donald T. Campbell. 2002. *Experimental and Quasi-Experimental Designs*. Boston: Houghton Mifflin Company. CHAPTER 7: Regression Discontinuity Design

Evergreen, Stephanie D. H. 2017. *Effective Data Visualization: The Right Chart for the Right Data*. Thousand Oaks, CA: Sage.
CHAPTER 2: When a Single Number is Important: Showing Mean, Frequency and Measures of Variability.

Key Questions to Keep in Mind in Reading the Material:
1) What are appropriate uses of two-sample t-tests, descriptive statistics, or regression discontinuity designs?
2) What are some general rules for visualizing descriptive statistics?
3) What are characteristics of effective data presentation?
4) How can data communicate causality?

XI. EVALUATION & DECISION-MAKING – April 7, 2020
DUE: Draft Logic Model

Coursebook: Newcomer, Hatry, and Wholey (2015)
CHAPTER 27 – Providing Recommendations, Suggestions, and Options for Improvement
CHAPTER 28 – Writing for Impact

Materials on Blackboard
GAO. 2005. Managing for Results: Enhancing Agency Use of Performance Information for Management Decision Making. Washington, DC: United States Government Accountability Office (GAO).

Key Questions to Keep in Mind in Reading the Material:
1) When are findings from evaluations sufficient to constitute such “Evidence?”
2) Why is it difficult to transfer evaluation and research findings into practice?
3) What is practice-based evidence?
4) What do useful recommendations look like?

XII. TRENDS IN EVALUATION– April 14, 2020

Coursebook: Newcomer, Hatry, and Wholey (2015)

CHAPTER 29 – Contracting for Evaluation Products and Services
CHAPTER 30 – Use of Evaluation in Government
CHAPTER 31 – Evaluation Challenges, Issues, and Trends

<u>Materials on Blackboard</u>
Pew-MacArthur. 2014. Evidence-Based Policymaking: A Guide for Effective Government. Washington, DC: The Pew Charitable Trusts and the John D. and Catherine T. MacArthur Foundation.

Key Questions to Keep in Mind in Reading the Material:
1) Is the model proposed to support evidence-policymaking proposed by the Pew and MacArthur foundations feasible for states to implement?
2) What are the tradeoffs between accountability and innovation in evaluation planning?
3) Who are the key audiences of program evaluations?

XIII. COURSE REVIEW AND FEEDBACK ON EVALUATION PROJECTS
DUE: Draft Design Matrix
– April 21, 2020

XIV. STUDENT PRESENTATIONS – April 28, 2020

XV. FINAL PAPER DUE – May 5, 2020

FINAL PAPER DESCRIPTION

APPLIED PROJECT
(OPTION A)

Student groups (of no more than 3-4 students) may respond to a request from a nonprofit organization or public agency interested in receiving evaluation technical support. Some of the requests will entail a specific project or program, and the instructor will provide data for you to analyze for this project.

Once a student group decides to work with a nonprofit or public agency, they should submit a brief **statement of the work** (2 pages) first to the instructor, and then, upon securing his approval, to the management of the nonprofit or public organization.

The **Statement of the Work** should include:

1) a concise description of the evaluation questions that the primary stakeholders have identified;
2) a description of the methodology (the analytical method, such as two-sample t-tests, visual graphs, qualitative or quantitative approaches, etc.) to be employed by the students to address the evaluation questions;
3) identification of specific tasks to be accomplished;
4) a time line depicting deadlines for the tasks identified in #3.

This project will involve 1) web research on the program related to the data that you plan to analyze, 2) analysis of the data provided by the instructor through qualitative or quantitative methods, 3) data visualization to display the contrasts that you have identified in this research, and 4) a logic model to outline the plan for the evaluation.

The written product will be submitted first to the instructor for suggestions, and then to the nonprofit agency requestor.

The report should have all of the components identified in APPENDIX I.

EVALUATION PROPOSAL
(OPTION B)

This will involve developing a proposal for an evaluation for a real-world program in the public or nonprofit sector.

You are asked to develop a scoping and evaluation design paper for a program. You will conduct the scoping activities but will only propose the evaluation; you are not expected to conduct the actual evaluation itself. You do not need to communicate with a nonprofit or government program before doing this assignment. You may find it helpful if you can contact somewhere there, but it is not required. While the instructor may provide some guidance to you on the subject of your topic, you bear the full responsibility for selecting a project that will provide you with the information you need to complete this assignment.

Scoping out the evaluation entails collecting information on the program through interviews with key contacts (decision-makers, staff, etc.) on current information needs, and conducting a synthesis of past related research and evaluation studies. You should conduct research on 1) the type of program that you are proposing an evaluation for (you should understand the topic, program, and ways that services are provided to clients); 2) similar evaluations that have been carried out for a program like this in the past. Students are expected to research evaluations undertaken on similar sorts of programs to offer a comparative perspective. You should only select a program that you have determined that you can access adequate information for as it is your responsibility to access information for this assignment.

With the focus of the evaluation identified, the project will then involve laying out an evaluation design, data collection plan, analysis plan, and briefing and presentation plan. Students are expected to prepare a logic model, and design data collection tools and pretest them, e.g. surveys or interview schedules. The design should be developed with clear awareness of the political aspects of the situation and tailored to the needs of the agency leadership. Strategies for encouraging the use of the resulting evaluation findings also should be discussed.

The report should have all of the components identified in APPENDIX I.

APPENDIX I: FINAL PAPER OUTLINE (EVALUATION OR PROPOSAL)

The suggested contents and order of presentation for the report are as follows:

I. **Executive Summary:** Similar to the memo, the executive summary should address all major components of the analysis.

II. **Introduction and Background**: An introduction to the project, including a brief description of the program, and a synthesis of relevant past research and evaluation findings. Also, cite relevant literature on programs related to the one under investigation.

III. **Evaluation Questions:** The issues that have been identified and the specific questions to be addressed, or that should be addressed if the project is an evaluation plan.

IV. **Evaluation Design:** A brief summary of the design(s) undertaken, or to be undertaken, including the concepts and variables, the theory underlying the policy/program, etc. should be provided. A **logic model** of the program/policy must be developed and presented in the body of the report with an appropriate introduction, i.e., stating what it is, how it was developed and how it may be used by the client.

V. **Data Collection:** The sources of data available, measures used to address the research questions, data collection methods, and sampling procedures should be discussed. Also, there should be a list of limitations to each type of validity and reliability, as well as actions undertaken to reduce the impact of the limitations identified. Use of a *design matrix* is strongly recommended.

VI. **Data Analysis**: Appropriate tables and figures should be constructed in accordance with guidance given in class for projects that are completed.
- For the evaluation proposal, explain your intended data analysis.

VII. **Proposed Presentation and Utilization Plan:** Strategies for presenting the results to key stakeholders and decision-makers and strategies for facilitating utilization should be provided.

VIII. **Potential Problems and Fall-back Strategies:** Identify potential problems that may arise in conducting the evaluation and the strategies that should be used to either avoid the problem or deal with its occurrence.

IX. **Key Recommendations.**
- For the evaluation proposal, recommendations are for how to do the study.

X. **Conclusion:** A brief conclusion should be provided.

Supplemental Material (Optional Readings for Further Learning)

SCOPING EVALUATIONS
CHAPTER 2: Developing Program Impact Theory
CHAPTER 4: Exploratory Evaluation
Donaldson, Stewart I. 2007. Program Theory-Driven Evaluation Science: Strategies and Applications. New York: Routledge.
Howard White, How to Build a Theory of Change for Impact Evaluation
https://www.youtube.com/watch?v=pWutrZwzP18
Andy Fyfe, Being Able to Communicate Your Social and Environmental Impact is Essential
http://www.socialgoodguides.com/evaluation-impact-assessment-guide/

EVALUATION DESIGN
CHAPTER 6 – Comparison Group Designs
Barnow, Burt S. 2010. "Setting up Social Experiments: The Good, the Bad, and the Ugly." *Zeitschrift für ArbeitsmarktForschung* 43 (2):91-105.

ADDRESSING CAUSAL INFERENCE AND DISCOVERY
GAO. 2012. Designing Evaluations. Washington, DC: United States Government Accountability Office (GAO).

THREATS TO VALIDITY
CHAPTER 11: Evaluating Community Change Programs
Shadish, William R., Thomas D. Cook, and Donald T. Campbell. 2002. *Experimental and Quasi-Experimental Designs*. Boston: Houghton Mifflin Company.
CHAPTER 2: Statistical Conclusion Validity and Internal Validity
CHAPTER 3: Construct Validity and External Validity
Frank, Lori, Laura Forsythe, Lauren Ellis, Suzanne Schrandt, Sue Sheridan, Jason Gerson, Kristen Konopka, and Sarah Daugherty. 2015. "Conceptual and Practical Foundations of Patient Engagement in Research at the Patient-Centered Outcomes Research Institute." *Quality of Life Research* 24 (5):1033-1041.

DATA COLLECTION
CHAPTER 9: Recruitment and Retention of Study Participants
CHAPTER 18: Using the Internet
Luckey, James W., Andy Broughton, and James E. Sorensen. 1982. "Archival data in program evaluation and policy analysis." *Evaluation and Program Planning* 5 (4):319-326.
Clifasefi, Seema L., Susan E. Collins, Kenneth Tanzer, Bonnie Burlingham, Sara E. Hoang, and Mary E. Larimer. 2011. "Agreement between self-report and archival public service utilization data among chronically homeless individuals with severe alcohol problems." *Journal of Community Psychology* 39 (6):631-644.
Ketokivi, Mikko A., and Roger G. Schroeder. 2004. "Perceptual measures of performance: fact or fiction?" *Journal of Operations Management* 22 (3):247-264.
Axinn, William G., and Lisa D. Pearce. 2006. *Mixed Method Data Collection Strategies*.

New York, NY: Cambridge University Press.
CHAPTER 2: Fitting Data Collection Methods to Research Aims
Cairo, Alberto. 2016. *The Truthful Art: Data, Charts, and Maps for Communication 1st Edition*. Berkeley, California: New Riders.
CHAPTER 4: Of Conjectures and Uncertainty

DATA ANALYSIS
Cairo, Alberto. 2016. *The Truthful Art: Data, Charts, and Maps for Communication 1st Edition*. Berkeley, California: New Riders.
CHAPTER 6: Exploring Data with Simple Charts
CHAPTER 7: Visualizing Distributions
CHAPTER 11: Uncertainty and Significance

DATA VISUALIZATION
Cairo, Alberto. 2016. *The Truthful Art: Data, Charts, and Maps for Communication 1st Edition*. Berkeley, California: New Riders.
CHAPTER 2: The Five Qualities of Visualization
CHAPTER 3: The Truth Continuum
CHAPTER 5: Basic Principles of Visualization
Evergreen, Stephanie D. H. 2017. *Effective Data Visualization: The Right Chart for the Right Data*. Thousand Oaks, CA: Sage.
CHAPTER 4: How We Are Better or Worse Than a Benchmark
CHAPTER 5: What the Survey Says
CHAPTER 6: When There are Parts of a Whole
Chapter Six of Presentation Zen: Simple Ideas on Presentation Design and Delivery by Garr Reynolds: http://www.presentationzen.com/chapter6_spread.pdf
Two Alternatives to a Second Axis: http://stephanieevergreen.com/two-alternatives-to-using-a-second-y-axis/

EVALUATION & DECISION-MAKING
Nussbaumer Knaflic, Cole. 2015. *Storytelling with Data: A Data Visualization Guide for Business Professionals*. New York, NY: Wiley.
CHAPTER 1: The Importance of Context
CHAPTER 7: Lessons in Storytelling
Duarte, Nancy. 2010. *Resonate: Present Visual Stories that Transform Audiences*. New York, NY: John Wiley and Sons.
CHAPTER 1: Why Resonate?
CHAPTER 7: Deliver Something They'll Always Remember
The Arrogance of Dumbing It Down: https://www.linkedin.com/pulse/arrogancedumbing down-alvin-stone/

Course Policies

1. Incompletes: A student must consult with the instructor to obtain a grade of "I" (incomplete) no later than the last day of classes in a semester. At that time, the student and instructor will both sign the contract for incompletes and submit a copy to the Program Director. Please consult the Student Handbook for the complete policy on incompletes.

2. Submission of Written Work Products Outside of the Classroom: It is the responsibility of the student to ensure that an instructor receives each written assignment, even those submitted online through SafeAssign.

3. Submission of Written Work Products after Due Date: Policy on Late Work: All work must be turned in by the assigned due date in order to receive full credit for that assignment, unless an exception is expressly made by the instructor.

4. Academic Honesty: Please consult the "policies" section of the student handbook for the university code of academic integrity. Note especially the definition of plagiarism: "intentionally representing the words, ideas, or sequence of ideas of another as one's own in any academic exercise; failure to attribute any of the following: quotations, paraphrases, or borrowed information."

5. Changing Grades After Completion of Course: No changes can be made in grades after the conclusion of the semester, other than in cases of clerical error.

6. The Syllabus: This syllabus is a guide to the course for the student. Sound educational practice requires flexibility and the instructor may therefore, at her/his discretion, change content and requirements during the semester.

7. Accommodation for Students with Disabilities: In order to receive accommodations on the basis of disability, a student must give notice and provide proper documentation to the Office of Disability Support Services at UTEP.

8. Instructor's Policy on Grade Contestation: Students wishing to contest a grade are required to draft a brief memo explaining the reasoning behind their dispute, and to then schedule a meeting with the instructor to discuss it.

Grading Criteria

A
Excellent: Exceptional work for a graduate student. Work at this level is unusually thorough, well reasoned, creative, methodologically sophisticated, and well written. Work is of exceptional, professional quality.

B
Adequate: Competent work for a graduate student with some evident weaknesses. Demonstrates competency in the key course objectives but the understanding or application of some important issues is less than complete.

C
Deficient: Inadequate work for a graduate student; rarely meets minimal expectations for the course. Work is poorly developed or flawed by numerous errors and misunderstandings of important issues.

F
Unacceptable: Work fails to meet minimal expectations for course credit for a graduate student. Performance has consistently failed to meet minimum course requirements. Weaknesses and limitations are pervasive.