University of Colorado **Denver**
CU IN THE CITY

SYLLABUS

PUAD 5003 RESEARCH AND ANALYTIC METHODS

FALL 2021

INSTRUCTOR: Serena Kim
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CLASS DAYS & TIMES: Tue 1:00-3:30pm
CLASS LOCATION: LSC 500
CLASS ANNOUNCEMENTS: Canvas
OFFICE HOURS: By appointment

COURSE OVERVIEW

I. INTRODUCTION

Welcome to *Research & Analytic Methods*! Decision-making supported by qualitative and quantitative data is becoming increasingly important. Organizations are routinely using data analytics to make informed decisions, evaluate programs, and manage resources. This course will help students build the analytical foundation and data literacy to become competent managers, analysts, and coordinators in public and nonprofit organizations.

This course introduces the fundamentals of research design in the social sciences and covers applied qualitative and quantitative analysis techniques. Students will develop a conceptual and practical understanding of research and analytic methods, as well as gain essential skills for literature review, text analysis, data collection and management, data visualization, and statistical analysis including univariate, bivariate, and multivariate analysis. Class sessions will be divided into lectures, discussions, and lab sessions. Students will also work on their own original research projects, with a focus on solving real-world problems and using data for social good.

II. UNIVERSITY COURSE CATALOGUE DESCRIPTION

Examines quantitative research methods used to answer questions and test hypotheses in public and nonprofit settings. Methods covered include identifying and reviewing scholarly literature; formulating research questions; selecting appropriate design, data collection and sampling strategies; and analyzing data. Topics include causal and descriptive designs, interview and survey methods, and descriptive and inferential statistics such as chi-square and regression.

III. LEARNING OBJECTIVES

By the end of the course, students will be able to:

- ❏ Formulate relevant research questions and hypotheses
- ❏ Understand social science research designs and languages
- ❏ Find, clean, organize, and use publicly-available datasets
- ❏ Work with different types of data
- ❏ Describe the central tendency and the distribution of data
- ❏ Understand sampling and the Central Limit Theorem (CLT)

- ❏ Conduct and interpret basic statistical tests including z-test, t-test, analysis of variance (ANOVA), chi-square test, and linear and logistic regression
- ❏ Create basic data visualizations such as bar graphs, histograms, and scatter plots
- ❏ Locate, critique, and synthesize the existing research literature
- ❏ Design survey and interview questions
- ❏ Analyze text data from documents, open-ended survey questions, and interviews
- ❏ Communicate findings effectively to the target audience including non-expert stakeholders
- ❏ Understand the limitations of particular research methods
- ❏ Choose research methods appropriate to research aims and objectives
- ❏ Develop advanced critical thinking skills

IV. The Network of Schools of Public Policy, Affairs, and Administration (NASPAA) Competencies

MPA Target Competency	Relevant Course Activities
To analyze, synthesize, think critically, solve problems and make decisions	Collecting and analyzing qualitative and quantitative data; Conducting original research on a topic of interest
The student is able to select and use appropriate research methods and analytical tools for collecting and analyzing data	Problems sets; Using appropriate research methods and analytical tools to analyze data
The student is able to locate and critically assess, review, and understand relevant research.	Conducting a literature review for their research projects; critiquing research papers in class; Discussing research designs and strategies
The student is able to communicate effectively in writing to a variety of audiences	Writing a research paper; preparing a research poster; delivering a presentation

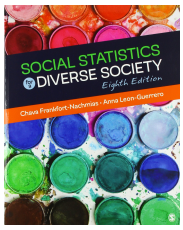
V. Course Prerequisites

High school-level arithmetic and algebra

VI. Textbooks and Course Materials

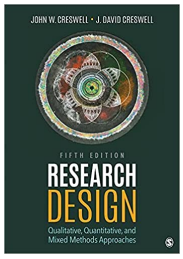
Required Textbooks

Title: Research Methods for Public Administrators (6th Edition)
Author: Gary Rassel, Maureen Berner, Jocelyn DeVance Taliaferro, Elizabethann O'Sullivan
Publisher: Routledge.
Publication year: 2016 (Previous and newer editions are also fine.)
ISBN-13: 978-0205856251
Available at: Amazon and other vendors



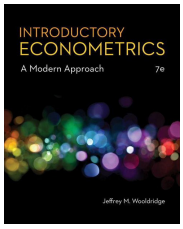
Title: Social Statistics for a Diverse Society (8th Edition)
Author: Chava Frankfort-Nachmias, Anna Y. Leon-Guerrero
Publisher: SAGE Publications
Publication year: 2017 (Previous and newer editions are also fine.)
ISBN-13: 978-1506347202
Available at: Amazon and other vendors

Optional Textbooks



Title: Research design: Qualitative, quantitative, and mixed methods approaches (5th Edition)
Author: Creswell, John W., & J. David Creswell
Publisher: Sage publications.
Publication year: 2017 (Previous or newer editions are also fine.)
ISBN-13: 978-1506386706
Available at: Amazon and other vendors

Title: Understanding Research Methods: An Overview of the Essentials (10th Edition)
Author: Patten, Mildred L., & Michelle Newhart
Publisher: SAGE Publications
Publication year: 2017 (Previous and newer editions are also fine.)
ISBN-13: 978-0415790529
Available at: Amazon and other vendors



Title: Introductory Econometrics: A Modern Approach (7th Edition)
Author: Jeffrey M. Wooldridge
Publisher: SAGE Publications
Publication year: 2019 (Previous and newer editions are also fine.)
ISBN-13: 978-1337558860
Available at: Amazon and other vendors

Software and Tools

You will need to use one of the following software or tools to complete the assignments in this course.

- **R**: Use both R and R Studio.
- **Stata**: The software is also installed in the SPA computer lab (1380 Lawrence Street, Suite 500). Student subscription ($48/month) is also available.
- **Python**: pandas, NumPy, statsmodels, and seaborn should be sufficient for this course.
- **SPSS**: SPSS is also installed in the SPA computer lab. Student access (GradPack) is also available.
- **Excel**: You have access to Microsoft 365.

You can complete all assignments in this course using any of the five tools listed above. Materials, resources, and technical support for using these tools will be provided by the instructor. However, Stata will be primarily used during the computer lab sessions for efficient time management. If you use software other than Stata, I will be happy to provide assistance right after lab sessions and during the office hours. Please note that I may not recommend Excel for your final project if (i) you are interested in using more than a single dataset, (ii) your analysis includes categorical dependent variables and multiple independent variables, or (iii) you are comparing means of more than two groups.

Evaluation

I. Assignments

Assignment due dates are available on Canvas. Assignment submissions should be made via Canvas, not emails. All written assignments must be single-spaced with one-inch margins. Include your name and page numbers in headers or footers.

1. Problem Set (45%)

There are six problem sets. Each problem set will consist of 5-7 questions and will account for 7-8% of your final grade. **Students are encouraged to work together to understand course material and problem set questions. However, students must write their own homework solutions themselves in their own words.** All problem sets should be typed (including all equations). To receive full credit for each question in the problem sets, you must show all work, including any relevant software output.

2. Qualitative Coding (5%)

Students will annotate a set of Tweets in a group of 3 and cross validate each other's annotation. A 200-word reflection write-up is also part of this assignment.

3. Quiz (5%)

There will be two quizzes to evaluate students' understanding of basic concepts in qualitative and quantitative research design and the selection of statistical tests appropriate for the research purpose and the types of data.

4. Final Project: Data to Policy (45%)

You will find any quantitative data (either your own or secondary data) and explore any public policy issues related to public good. Individually or in groups of no more than three, teams will (i) identify a research problem, (ii) develop research questions, (iii) conduct a literature review, (iv) collect data, (v) analyze and interpret data using basic statistical and qualitative tools (if relevant), (vi) interpret the findings and (vii) suggest policy and/or managerial implications. The final project consists of the following 5 components: (a) Proposal, (b) Introduction & Literature Review, (c) Final Paper, (d) Poster Presentation & Peer Review, and (e) Data to Policy Symposium participation. The fifth component, symposium, is optional but highly recommended. You are highly encouraged to work as a team (up to 3 students).

- **Proposal (1%)**: The purpose of this assignment is to get early-stage feedback from me on your research ideas, questions, and design. **You will identify research question(s), a brief background of the issue, data source, variables, unit of analysis, and expected number of observations of your analysis**. If you use publicly available data, submit a URL link of the dataset. If you plan to collect the data yourself, you should prepare a specific plan and the sequence of data collection activities. (up to 600 words)
- **Introduction & Literature Review (9%)**: Write up the first draft of the "introduction" and "literature review" sections of the paper. In the literature review section, you will need to provide insightful and critical synthesis (*not summary*) of the materials related to the identified research question (*not the topic in general*) and identify gaps in the literature. Detailed guidelines will be provided during the lectures. (up to 2,500 words)
- **Final Paper (15%)**: The final paper is the distillation of your efforts. Your final paper will include the following sections: (i) abstract (150 - 200 words), (ii) introduction, (iii) literature review, (iv) data and methods, (v) findings, (vi) discussion and policy implications, and (vii) references. Note screenshots of software outputs are not allowed in the data, methods, and findings sections. Your code and software output can be included in the appendix. I expect your final paper fully reflects my feedback on the previous assignment, Introduction & Literature Review. (up to 6,000 words excluding references and appendices)
- **Poster Presentation & Peer Review (20%)**: Your team will prepare (i) a research poster to share the findings of your original research and (ii) present your work in class at the end of the semester. Your poster should be a summary of your research and visually engaging. An optional poster format and a few examples from previous classes will be provided. You will also give and receive feedback to/from your classmates using an anonymized, electronic peer-review form. You are also expected to ask and answer questions and provide constructive feedback to each other.
- **Data to Policy Symposium (Extra +5%)**: If you would like to share your poster with a larger audience (e.g., students and faculty members from other classes, local government and nonprofit

employees), please consider participating in the Data to Policy Symposium hosted at the Auraria Library. If you participate in the poster symposium, you will get an extra credit of +5% toward your final grade.

II. Basis for Final Grade

A (95-100), A- (90-94.9), B+ (85-89.9), B (80-84.9), B- (80-82), C+ (75-79.9), C (70-74.9), C- (70-72), D+ (68-69), D (63-67), D- (60-62), F (0-59).

III. Grade Dissemination

Graded tests and assignments in this course will be returned via the Canvas course shell. You can access your scores at any time within the Canvas gradebook.

Course Schedule & Content

NOTE: **F&L** = Frankfort–Nachmias, Chava, and Anna Leon–Guerrero (2017); **O et al.** = O'Sullivan, Berner, Taliaferro, & Rassel (2016); ; **P&N** = Patten & Newhart (2017); **C&C** = Creswell & Creswell (2017); **W** = Wooldridge (2019); †= Readings and/or additional materials are available on Canvas; ❗ = Important – Read or watch it carefully; 👁 = Optional reading. Skim; ⏵ = Video; 📊 = Applied studies for the class discussions; Focus on understanding the analysis sections (i.e., data, methods, results).

Week	Module	Assignment
01	Module 01. Introduction to Research	
02	Module 02. The Language of Research	Quiz 1
03	Module 03. Data Management	
04	Module 04. Measures of Central Tendency & Variability	Problem Set 1
05	Module 05. The Normal Distribution & Sampling Distribution	Problem Set 2
06	Module 06. Estimation and The Logic of Hypothesis Testing	Proposal
07	Module 07. T-Test & Z-Test	Problem Set 3
08	Module 08. Cross Tabulation and Chi-Square Test	Problem Set 4
09	Module 09. Analysis of Variance	Problem Set 5
10	Module 10. Linear Regression	Problem Set 6
11	Module 11. Logistic Regression & Intro to Panel Analysis	
12	Module 12. How to Read and Write a Research Paper	Literature Review
13	Module 13. Intro to Qualitative Studies & Text As Data	Qualitative Coding
14	Module 14. Interview and Survey Data Collection	
15	Module 15. Mixed Methods & The Selection of An Approach	Quiz 2
16	Module 16. Final Project: Data to Policy	Paper & Poster

MODULE 01. INTRODUCTION TO RESEARCH

- **Readings**
  - O et al. Ch 1: Beginning a Research Project
  - P&N Part 1: Introduction to Research Methods †
- **Activities & Assignments**
  - Introduction; Syllabus overview; Student poster examples

MODULE 02. THE LANGUAGE OF RESEARCH

- **Readings**
  - O et al. Ch 2: Designs for Description & O et al. Ch 3: Designs for Explanation
  - F&L Ch 1: The What and the Why of Statistics
  - Hand, David J. "Deconstructing statistical questions." *Journal of the Royal Statistical Society: Series A* 157, no. 3 (1994): 317-338.
- **Activities & Assignments**
  - Quiz 1

MODULE 03. DATA MANAGEMENT

- **Readings**
  - Hadley Wickham. "Tidy Data." *Journal of Statistical Software* 70 (2016): 1-20. 59(10), 1–23. ❗ An informal, code-heavy version.
  - Wilkinson, Mark D., Michel Dumontier, IJsbrand Jan Aalbersberg, Gabrielle Appleton, Myles Axton, Arie Baak, Niklas Blomberg et al. "The Fair Guiding Principles for Scientific Data Management and Stewardship." Scientific data 3, no. 1 (2016): 1-9.
  - Christen, P. Ch 1: Introduction & Ch 2: The Data Matching Process in "Data Matching: Concepts and Techniques for Record Linkage, Entity Resolution, and Duplicate Detection". (2012).
  - F&L Ch 2: The Organization and Graphic Presentation of Data
  - Data Merging & Appending. University of Wisconsin Madison.
- **Activities & Assignments**
  - ***Computer Lab***: Loading, merging, and appending datasets using data from US Census, Colorado Information Marketplace, and Denver Open Data Catalogue.†

MODULE 04. MEASURES OF CENTRAL TENDENCY & VARIABILITY

- **Readings**
  - F&L Ch 3: Measures of Central Tendency & Ch 4: Measures of Variability
  - O et al. Ch 4: Measuring Variables 👁‍🗨
- **Activities & Assignments**
  - ***Computer Lab***: Creating descriptive statistics tables, scatter plots, bar graphs, and histograms
  - Problem Set 1

MODULE 05. THE NORMAL DISTRIBUTION & SAMPLING DISTRIBUTION

- **Readings**
  - F&L Ch 5: The Normal Distribution & Ch 6: Sampling and Sampling Distribution
  - Bunnies, Dragons and the 'Normal' World: Central Limit Theorem. The New York Times. ⏵
- **Activities & Assignments**
  - Problem Set 2

MODULE 06. ESTIMATION AND THE LOGIC OF HYPOTHESIS TESTING

- **Readings**
  - F&L Ch 7: Estimation & Ch 8: Testing Hypothesis
- **Activities & Assignments**
  - Final Project Proposal

MODULE 07. T-TEST & Z-TEST

- **READINGS**
  - F&L Ch 8: Testing Hypotheses
  - Duwe, Grant, and Susan McNeeley. "The Effects of Intensive Postrelease Correctional Supervision on Recidivism: A Natural Experiment" *Criminal Justice Policy Review* 32, no. 7 (2021) 740-763.
- **ACTIVITIES & ASSIGNMENTS**
  - ***Computer Lab***: T-test & Z-test
  - Problem Set 3

MODULE 08. CROSS TABULATION AND CHI-SQUARE TEST

- **READINGS**
  - F&L Ch 9: Bivariate Tables & Ch 10: The Chi-Square Test and Measures of Association
  - Benova, Lenka, Mardieh L. Dennis, Isabelle L. Lange, Oona MR Campbell, Peter Waiswa, Manon Haemmerli, Yolanda Fernandez et al. "Two Decades of Antenatal and Delivery Care in Uganda: A Cross-Sectional Study Using Demographic and Health Surveys." *BMC health services research* 18, no. 1 (2018): 1-15.
- **ACTIVITIES & ASSIGNMENTS**
  - ***Computer Lab***: Chi-square test
  - Problem Set 4

MODULE 09. ANALYSIS OF VARIANCE

- **READINGS**
  - F&L Ch 11: Analysis of Variance
  - Swann, William L., Sojeong Kim, Serena Y. Kim, and Terri L. Schreiber. "Urban-Rural Disparities in Opioid Use Disorder Prevention and Response Activities: A Cross-Sectional Analysis." *The Journal of Rural Health* 37, no. 1 (2021): 16-22.
- **ACTIVITIES & ASSIGNMENTS**
  - ***Computer Lab***: ANOVA
  - Problem Set 5

MODULE 10. LINEAR REGRESSION

- **READINGS**
  - F&L Ch 12: Regression and Correlation
  - Wooldridge Ch 2: The Simple Regression Model, Ch 3: Multiple Regression Analysis: Estimation & Ch 7. Multiple Regression Analysis with Qualitative Information
- **ACTIVITIES & ASSIGNMENTS**
  - ***Computer Lab***: Simple and linear regression; Regression assumption testing
  - Problem Set 6

MODULE 11. LOGISTIC REGRESSION & INTRO TO PANEL ANALYSIS

- **READINGS**
  - Wooldridge Ch 17-1: Limited Dependent Variable Models: Logit and Protbit Models for Binary Response
  - Wooldridge Ch 13: Pooling Cross Sections across Time: Simple Panel Data Methods & Ch 14: Advanced Panel Data Methods: Fixed Effects and Random Effects Models
  - Ellison, Christopher G., Benjamin Dowd-Arrow, Amy M. Burdette, Pablo E. Gonzalez, Margaret S. Kelley, and Paul Froese. "Peace Through Superior Firepower: Belief in Supernatural Evil and Attitudes Toward Gun Policy in the United States." *Social science research* 99 (2021): 102595.

- **Activities & Assignments**
  - ***Computer Lab***: Binary and ordered logistic regression

MODULE 12. HOW TO READ AND WRITE A RESEARCH PAPER

- **Readings**
  - P&N Part 2: Reviewing and Citing Literature
  - P&N Part 10. Preparing Research Reports
  - Monnat, Shannon M. "The Contributions of Socioeconomic and Opioid Supply Factors to Us Drug Mortality Rates: Urban-Rural and Within-Rural Differences." *Journal of rural studies* 68 (2019): 319-335.
- **Activities & Assignments**
  - Introduction & Literature Review

MODULE 13. INTRO TO QUALITATIVE STUDIES & TEXT AS DATA

- **Readings**
  - C&C Ch 9: Qualitative Methods
  - Kim, Serena Y., Koushik Ganesan, Princess Dickens, and Soumya Panda. "Public Sentiment toward Solar Energy—Opinion Mining of Twitter Using a Transformer-Based Language Model" *Sustainability* 13, no. 5 (2021): 2673.
- **Activities & Assignments**
  - Qualitative Coding
  - ***Computer Lab***: Annotating texts

MODULE 14. INTERVIEW AND SURVEY DATA COLLECTION

- **Readings**
  - O et al. Ch 6: Contacting and Talking to Subjects, Ch 7: Collecting Data With Questions and Questionnaires, & Ch 8: Protection of Human Research Subjects and Other Ethical Issues
  - Swann, William L., Shelley McMullen, Dan Graeve, and Serena Kim. "Community Resistance and Discretionary Strategies in Planning Sustainable Development: The Case of Colorado Cities." *Urban Planning* 4, no. 4 (2019): 98-110.
  - Thrasher, Jodi, Heidi McNeely, and Bonnie Adrian. "When Nursing Assertion Stops: A Qualitative Study to Examine the Cultural Barriers Involved in Escalation of Care in a Pediatric Hospital." *Critical Care Nursing Clinics* 29, no. 2 (2017): 167-176.
- **Activities & Assignments**
  - Guest Lecture: Heidi McNeely, PhD (Children's Hospital Colorado)

MODULE 15. MIXED METHODS & THE SELECTION OF AN APPROACH

- **Readings**
  - C&C Ch 1: The Selection of a Research
  - C&C Ch 10: Mixed Methods Procedures
  - Kim, Serena Y. "Institutional Arrangements and Airport Solar PV." *Energy Policy* 143 (2020): 111536. (mixed methods)
- **Activities & Assignments**
  - Quiz 2

MODULE 16. FINAL PROJECT: DATA TO POLICY

- **Readings**
  - O et al. Ch 15: Completing the Project and Communicating Findings
  - Matthew Stuckey & Tammy Hoyer. How To Make An Effective Poster. UC Davis.
- **Activities & Assignments**
  - Paper & Poster

Course Policy & Procedure

Diversity and Inclusion

It is my intent that students from all diverse backgrounds and perspectives be well-served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. I will do my best to present materials and activities that are respectful of all groups and individuals with various gender identity, sexual orientation, disability, age, socioeconomic status, ethnicity, race, religion, culture, perspective, and other background characteristics. Your suggestions about how to improve the value of diversity in this course are encouraged and appreciated.

Class Policy

- **Attendance and Absences Policy**: We follow UC Denver Student Attendance and Absences Policy (Policy Number: 7030).
- **Emails**: I do my best to respond to all emails within 24 hours on weekdays. I do not check emails regularly on weekends.
- **Announcements**: It is a student's responsibility to check Canvas announcements regularly. Make sure to receive notifications when announcements are posted on Canvas.
- **Group Work Policy**: Group work is encouraged for the group assignments. Students are encouraged to work together to understand course material, including homework materials. However, students must complete individual assignments themselves.
- **Grades of "Incomplete"**: The current university policy concerning incomplete grades will be followed in this course. Incomplete grades are given only in situations where unexpected emergencies prevent a student from completing the course; students have up to one year to complete course requirements. Your instructor is the final authority on whether you qualify for an incomplete. Incomplete work must be finished within the time allowed or the "I" will automatically be recorded as an "F" on your transcript.

Resources

- **University Academic Calendar**: Check out UC Denver Academic Calendar
- **Writing Center**: The CU Denver Writing Center can assist you free of charge in developing and honing your writing skills. I used a similar service when I was in college. It helped me tremendously.
- **Auraria Library**: I strongly encourage you to acquaint yourself with the Auraria Library and all that it has to offer. It is an indispensable resource for gaining access to academic journal articles, research databases, books, news articles, citation management software, etc. To use these resources, you must have a student ID number.
- **The Student and Community Counseling Center** (located in Tivoli 454): For students feeling overwhelmed or experiencing life stressors that interfere with academic or personal success, the Student and Community Counseling Center is located in Tivoli 454 and provides cost-free and confidential mental health services to help students manage personal challenges that impact emotional or academic wellbeing. You can learn more about the center at www.ucdenver.edu/life or by calling 303-556-4372.
- **Emergency Support**: The Loving Lynx Committee is a resource available for CU Denver students dealing with unanticipated events related (but not limited) to: accidents, medical or dental emergencies, natural

disasters, and/or a need for temporary housing. If you are unsure if your situation constitutes as an unanticipated event, we encourage you to contact the Dean of Student's Office to discuss your situation. The CU Denver Food Pantry provides access to non-perishable food and personal care items for CU Denver students in need; all CU Denver students are welcome (must have current student ID). The CU Denver Food Pantry is located on the 3rd floor of the Lola & Rob Salazar Student Wellness Center.

University Policies

Access

- **Disability Access**: The University of Colorado Denver is committed to providing reasonable accommodation and access to programs and services to persons with disabilities. Students with disabilities who want academic accommodations must register with Disability Resources and Services (DRS) in Academic Building 1, #2116, Phone: 303- 315-3510 , Fax: 303-315-3515. I will be happy to provide approved accommodations, once you provide me with a copy of DRS's letter. Note: DRS requires students to provide current and adequate documentation of their disabilities. Once a student has registered with DRS, DRS will review the documentation and assess the student's request for academic accommodations in light of the documentation. DRS will then provide the student with a letter indicating which academic accommodations have been approved.

Academic Honesty

- **Student Code of Conduct**: Students are expected to know, understand, and comply with the ethical standards of the university, including rules against plagiarism, cheating, fabrication and falsification, multiple submissions, misuse of academic materials, and complicity in academic dishonesty. For suggestions on ways to avoid academic dishonesty, please see the Academic Honesty Handbook.
- **Plagiarism** is the use of another person's ideas or words without acknowledgement. The incorporation of another person's work into yours requires appropriate identification and acknowledgement. Examples of plagiarism when the source is not noted include: word- for-word copying of another person's ideas or words; the "mosaic" (interspersing your own words here and there while, in essence, copying another's work); the paraphrase (the rewriting of another's work, while still using their basic ideas or theories); fabrication (inventing or counterfeiting sources); submission of another's work as your own; and neglecting quotation marks when including direct quotes, even on material that is otherwise acknowledge. **CU Denver has a license agreement with Turnitin.com, a service that helps detect plagiarism by comparing student papers with Turnitin's database and Internet sources**. Students who take this course agree that all required papers may be submitted to Turnitin. While students retain copyright of their original course work, papers submitted to Turnitin become part of the Turnitin's reference database for the purposes of detecting plagiarism.
- **Cheating** involves the possession, communication, or use of information, materials, notes, study aids, or other devices and rubrics not specifically authorized by the course instructor in any academic exercise, or unauthorized communication with any other person during an academic exercise. Examples of cheating include: copying from another's work or receiving unauthorized assistance from another; using a calculator, computer, or the internet when its use has been precluded; collaborating with another or others without the consent of the instructor; submitting another's work as one's own.
- **Fabrication** involves inventing or counterfeiting information—creating results not properly obtained through study or laboratory experiment. Falsification involves deliberate alteration or changing of results to suit one's needs in an experiment or academic exercise.
- **Multiple submissions** involve submitting academic work in a current course when academic credit for the work was previously earned in another course, when such submission is made without the current course instructor's authorization.

- **Misuse of academic materials** includes theft/destruction of library or reference materials or computer programs; theft/destruction of another student's notes or materials; unauthorized possession of another student's notes or materials; theft/destruction of examinations, papers, or assignments; unauthorized assistance in locating/using sources of information when forbidden or not authorized by the instructor; unauthorized possession, disposition, or use of examinations or answer keys; unauthorized alteration, forgery, fabrication, or falsification of academic records; unauthorized sale or purchase of examinations, papers, or assignments.

Nondiscrimination and Sexual Misconduct

The University of Colorado Denver is committed to maintaining a positive learning, working and living environment. University policy and Title IX prohibit discrimination on the basis of race, color, national origin, sex, age, disability, pregnancy, creed, religion, sexual orientation, veteran status, gender identity, gender expression, political philosophy or political affiliation in admission and access to, and treatment and employment in, its educational programs and activities. University policy prohibits sexual misconduct, including harassment, domestic and dating violence, sexual assault, stalking, or related retaliation. If you have experienced some sort of sexual misconduct or discrimination please visit the Office of Equity/Title IX web site to understand the resources available to you or contact the Office of Equity/Title IX Coordinator (1-844-288-4853).