

**CHSC 6396, CRN 26930**  
**Advanced Research Methods**  
**Spring 2021**

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**Office:** HSSN 409

**Instructor:** Carolina Valencia, PhD

**Office:** HSSN 488

**Class meeting time:** Tuesday 12:00 pm– 2:50 pm, Through Zoom

**Office Hours:** By appointment

**Catalog Description:** This course focuses on the principles and application of human health-related research methods. Topics include research problem identification, study planning, data collection, statistical analysis, interpretation of findings, and disseminating results. Prerequisites: PSYC 5310 with a grade of "B" or better, or PSYC 5311 with a grade of "B" or better, or other graduate-level statistics course with a grade of "B" or better.

**Purpose and Overview:** To study and learn the principles that guide the development and conduct of quantitative clinical, field, basic, and applied research. These research principles will be studied and applied to 1) understanding and establishing causal relationships; 2) the analysis of research methods and findings reported in the published literature, and 3) developing a thesis or dissertation research project. What you learn will give you the means to begin designing and carrying out your scientific studies, critically analyze others' research, and evaluate research findings reported in professional journals.

**Learning Objectives:** *At the end of this course, you will be able to:*

- **STATE** the common means of acquiring knowledge
- **ARTICULATE** the differences between scientific and non-scientific methods of inquiry
- **IDENTIFY AND EVALUATE MEASUREMENT APPROACHES** for phenomena in the health sciences ("operationalize" phenomena for quantification)
- **IDENTIFY** ethical risks and violations in quantitative research
- **DEVELOP and STATE** testable scientific hypotheses
- **DEFINE and APPLY** the basic components of experiments, including random selection, random assignment, sample, population, dependent variable, the independent variable, and confound.
- **DESCRIBE** the differences between experimental, quasi-experimental, and non-experimental research designs
- **NAME** the basic types of experimental reliability and validity, and common threats to validity in research
- **DEFINE and APPLY** basic (e.g., mean, variation, proportions) and advanced statistical methods (e.g., logistic regression, structural equation modeling) for the description of data sets

- **RECOGNIZE** the statistical characteristics of data sets and **NAME** the statistical strategies used for their analysis

### **Recommended Reading Resources**

- Allen F. Repko, Rick Szostak. Interdisciplinary Research: Process and Theory Third Edition. ISBN-13: 978-1506330488
- Frederick J Gravetter, Lori-Ann B. Forzano. Research Methods for the Behavioral Sciences 6th Edition. ISBN-13: 978-1337613316
- Dianne V. Jewell. Guide to Evidence-Based Physical Therapist Practice 4th Edition. ISBN-13: 978-1284104325
- Publication Manual of the American Psychological Association, 6<sup>th</sup> Edition (2009). Washington, DC: APA Press
- Gastel, B. and Day R.A. How to write and publish a Scientific Paper 8th edition
- Francis L Macrina. Scientific Integrity 3rd ed

**Course Format:** This course will be conducted as a graduate-level seminar. A seminar is characterized by informality and discussion. In contrast to undergraduate level courses in which the instructor may present all information in a single structured lecture, in graduate seminar courses, **students are expected to read and think about the assigned readings days before the class meeting.** Furthermore, they should come to class prepared with questions and discuss issues relevant to the reading assignment and their own projects. Class attendance is required.

### **Course Assignments Description:**

#### A. Literature Review

Students will create a Literature Review. The Literature Review should show a natural progression of topics and encompass the background and support for the selected research project: Introduction, the main idea of the review, the point you are trying to establish in your manuscript, develop one or more supporting points or details that provide evidence for this idea, develop supporting details, and finish with a concluding section linked to the research question. The Literature Review should include information found from preliminary literature searches.

**EndNote is mandatory for citations.**

<http://libguides.utep.edu/c.php?g=430457&p=2937156>

<http://libguides.utep.edu/endnoteweb>

It is expected that this literature review to be a minimum of 8 pages and maximum of 12 pages in length (without including references). Please format in a professional manner (AMA, APA) and cite your sources accordingly.

#### B. Methods

Students will submit the Methods section of their proposed project. Methods section should include: description of participants (who they were, how many, and how they will be selected), materials (measures, equipment, instruments, surveys, or stimuli used in the experiment), design (type of design, variables, outcomes), procedure (detail the procedures used in your experiment/project), statistical analysis (which statistical analysis will you be using to answer your

research question?). Remember to provide enough detail that another researcher could replicate your experiment/project but focus on brevity. Avoid unnecessary detail that is not relevant to the outcome of the experiment/project.

C. Leading Journal Club.

A journal club is a regular gathering of scientists to discuss a scientific paper found in a research journal. In this class, each student will present a summary of the chosen paper that the whole group has read. Then, the discussion begins. Classmates ask clarifying questions, inquire about different aspects of the experimental design, critique the methods, and bring a healthy amount of skepticism (or praise) to the results. The chosen paper MUST be submitted a week in advance to the whole class.

D. Class Participation

Active student participation in this course is essential. Students must be prepared to come to class to discuss, answer questions, and participate in all class activities.

E. Symposium/Poster session of their research protocols (No results)

At the end of this course, the students are required to do a final presentation on their specific research (Thesis or Dissertation), including a summary of the topic, an introduction, which will contain the most relevant literature (background), objectives, rationale and approach, and a discussion of the design and methodology. Details for this activity and a poster workshop will be provided after Spring Break.

**Grading:**

A standard grading scale will be used: A=90+, B=80-89, C=70-79, D=60-69, F≤ 59. The weight of each of the course requirements listed above is:

Literature Review	20%
Design and Methods	20%
Leading Journal Club	20%
Class participation	10%
Symposium/Poster session	30%

**IMPORTANT NOTE:** No work will be accepted after the stated due date/time. Work that is found to be from other sources will receive zero credit, cannot be made up, and according to University policy, must be turned over to the Dean of Students for adjudication, which may result in, for example, a grade of “F” in the course, academic probation, loss of financial aid, and/or expulsion from the program.

\*\*\*\*The course syllabus provides a general plan for the course; deviations may be necessary.

Class	Topic	Readings*
<b>Module 1</b>		
01/19	<ul style="list-style-type: none"> <li>- Course overview, discussion of student research plans</li> <li>- Basics of Research Methods</li> <li>- Purpose of Literature Review</li> </ul>	Class Syllabus Discussion (Lit. Review Topic, how to start, basics of research methods, importance)
01/26	<ul style="list-style-type: none"> <li>- Resources for conducting the Literature Review</li> </ul>	Librarian Jacob Galindo Reference/citation manager RefWorks/Endnotes Conducting an effective literature search
02/02	<ul style="list-style-type: none"> <li>- Identifying the Research Problem Developing the Question</li> <li>- Hypotheses</li> <li>- Aims and Objectives</li> <li>- <b><u>Connect the dots</u></b></li> </ul>	<b>Deadline for paper submission for students leading the Journal Club on 2/09 (5 students)</b> <b>Connecting the dots: Explain the logic and consistency across the identified problem (or gap in research), research question(s), hypothesis (es), aims, and objectives. The students will identify, justify, and explain selecting the appropriate research method (or design) to address (answer) the stated problem (question(s))</b>
02/09	<b>Journal Club (5 students)</b>	(Video conference style presentation, voice over slides, or live Power Point presentation)
<b>Module 2</b>		
02/16	Research designs, research questions, and Common Statistical methods  How research design guides statistical methods?	<u>In-class activity-</u> "Choose your design, and develop the statistical analysis plan."

02/23	<p>Research designs, research questions, and Common Statistical methods.</p> <p>Multivariate Analysis- Model Building</p>	<p><u>In-class</u> statistical analysis and interpretation work session. Comparing means, Correlations, Applied Logistic Regression, General Linear Model</p> <p><u>In-class activity-</u> “Choose your methods.”</p>
03/02	<p>Special Topics:</p> <ul style="list-style-type: none"> <li>- Validity/Reliability</li> <li>- Clinical Trials and importance of Randomization</li> <li>- Sampling and Power Analysis (small vs larger sample)</li> </ul>	<p><u>In-class</u> statistical analysis and interpretation work session</p>
03/9	<p>Special Topics:</p> <ul style="list-style-type: none"> <li>- Other Experimental Design</li> <li>- Time Series</li> </ul>	<p><u>In-class activity-</u> To be determined (based on presented topics)</p> <p><b>Literature Review due</b></p>
03/16	Spring Break	No Class
<b>Module 3</b>		
03/23	<p>Threats to Internal and External Validity</p> <ul style="list-style-type: none"> <li>- Controlling for variables</li> <li>- Confounding variables</li> </ul>	
03/30	<p>Student Presentations on Threats to Internal and External Validity related to their Research Proposal</p>	<p><b>Blackboard Discussion:</b></p> <p><b>Students should post under Discussion Board all the Threats to Internal and External Validity related to their own Research Project. Students should also provide a solution or a way to minimize each threat (if possible).</b></p> <p><b>Deadline for paper submission for students leading the Journal Club on 04/06 (5 students)</b></p>

04/06	<b>Journal Club (5 Students)</b>	(Video conference style presentation, voice over slides, or live Power Point presentation) <b>students who did not present the first Journal Club</b>
4/13	<b>Special Topic (tentative): Sampling and Power Analysis Discussion</b>	<b>Design/Methods due</b> (from your own project) Please submit through Blackboard
4/20	<b>Special Topic (tentative): Writing and Publishing Research</b>	
4/27	<b>Final Thoughts: Life after PhD</b>	Invited expert panel
5/4	<b><u>Symposium/Poster session</u></b>	TBA
5/11	<b>Finals Week</b> <b><u>Symposium/Poster session</u></b>	TBA

\* Course Schedule is subject to change as the professor deems necessary

## Class Policies

### UTEP Class Attendance Policy

“The student is expected to attend all classes and laboratory sessions. It is the responsibility of the student to inform each instructor of extended absences. When, in the judgment of the instructor, a student has been absent to such a degree as to impair his or her status relative to credit for the course, the instructor can drop the student from the class with a grade of W before the course-drop deadline or with a grade of F after the course-drop deadline.”

<http://catalog.utep.edu/grad/academic-regulations/curriculum-and-classroom-policies/>

**Students are allowed ONE absence during the semester. Speak with us directly regarding extended absences from class.**

### UTEP Disability Policy:

If you have a disability and need classroom accommodations, please contact the Center for Accommodations and Support Services (CASS) at 747-5148, or by email [cass@utep.edu](mailto:cass@utep.edu), or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at [www.sa.utep.edu/cass](http://www.sa.utep.edu/cass).

### Academic Integrity:

Academic dishonesty will not be tolerated in this class. Any student found cheating will be reported to the Office of Student Conduct and Conflict Resolution, where further action may take place. Serious sanctions can result from academic dishonesty of any sort. For more information and the complete policy, see <http://sa.utep.edu/osccr/academic-integrity/resources/>.

### **SCHOLARSHIP, ACADEMIC HONESTY AND WHAT IT MEANS TO BE THE “AUTHOR” OF A PIECE OF WRITING**

Every time you author a written document, *you claim ownership* of that document and its contents and all of the rights and responsibilities that accompany that ownership. *Your name as the author of the work* tells everyone that the content of the paper is entirely original. In other words, all of the words, phrases, sentences, and paragraphs that appear in your document have never before existed in any other source or publication. That is, the content is yours and yours alone. In documents that refer to past journal articles, books, or other reports (“the literature”), you will need to explain to your reader the ideas of others, and in those cases, you must give citations (“references”) that correctly attribute the sources of the ideas that you are explaining. Whenever you write about the ideas of others, however, *you must always use your own words*. The words you use to present and discuss the work of others must be *completely original*. In other words, entirely your own. How you summarize and integrate the work of others will be part of your unique contribution. Your summary and integration have the potential to bring new insights to the work of others. Putting others’ ideas into your own words is often referred to as “paraphrasing.” Paraphrasing is a skill that you must develop in order to be able to write about others’ work. It requires a great deal of practice and thought (Sobin, 2016).

**Notice of Policy on Cheating.** Students are expected to be above reproach in all scholastic activities. Students who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and dismissal from the university. "Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another student, any act designed to give an unfair advantage to a student or the attempt to commit such acts." Regent's Rules and Regulations, Part One, Chapter VI, Section 3.2, Subdivision 3.22. Since scholastic dishonesty harms the individual, all students, and the integrity of the University, policies on scholastic dishonesty will be strictly enforced.

#### **From the UTEP Dean of Student Affairs**

(<http://studentaffairs.utep.edu/Default.aspx?tabid=4386>). It is an official university policy that all suspected cases or acts of alleged scholastic dishonesty must be referred to the Dean of Students for investigation and appropriate disposition. Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give an unfair advantage to a student or the attempt to commit such acts. "Cheating" includes:

1. Copying from the test paper of another student, engaging in written, oral, or any other means of communication with another student during a test, or giving aid to or seeking aid from another student during a test;
2. Possession and/or use during a test of materials which are not authorized by the person giving the test, such as class notes, books, or specifically designed "crib notes";
3. Using, obtaining, or attempting to obtain by any means the whole or any part of non-administered test, test key, homework solution, or computer program; using a test that has been administered in prior classes or semesters but which will be used again either in whole or in part without permission of the instructor; or accessing a test bank without instructor permission;
4. Collaborating with or seeking aid from another student for an assignment without authority;
5. Substituting for another person, or permitting another person to substitute for one's self, to take a test; and
6. Falsifying research data, laboratory reports, and/or other records or academic work offered for credit;

**Plagiarism** means the appropriation, buying, receiving as a gift, or obtaining by any means another's work and the unacknowledged submission or incorporation of it in one's own academic work offered for credit, or using work in a paper or assignment for which the student had received credit in another course without direct permission of all involved instructors. NOTE: This includes cutting-and-pasting and photocopying from on-line and other material.

**Collusion** means the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on scholastic dishonesty. If you are found to be cheating or plagiarizing, you will be subject to disciplinary action, per UTEP catalog policy. Refer to <http://www.utep.edu/dos/acadintg.htm> for further information

**Special Accommodations:** I will make any reasonable accommodations for students with limitations due to disabilities, including learning disabilities. Please see me personally before or after class in the first two weeks or make an appointment, to discuss any special needs you might have. If you have a documented disability and require specific accommodations, you will need to contact the Center for Accommodations and Support Services in the East Union Bldg., Room 106 within the first two weeks of classes. The Center for Accommodations and Support Services can also be reached in the following ways:

Web: <http://sa.utep.edu/cass/>

Phone: (915) 747-5148 voice or TTY

Fax: (915) 747-8712

### **COVID-19 Accommodations**

Students are not permitted on campus when they have a positive COVID-19 test, exposure or symptoms. If you are not permitted on campus, you should contact me as soon as possible so we can arrange necessary and appropriate accommodations.

**(classes with on-campus meetings)** Students who are considered high risk according to CDC guidelines and/or those who live with individuals who are considered high risk may contact [Center for Accommodations and Support Services](#) (CASS) to discuss temporary accommodations for on-campus courses and activities. Apply at [cassportal.utep.edu](http://cassportal.utep.edu) and fill out a three-question application. You will be scheduled to meet with disability coordinator to discuss your unique situation.

### **CLASS RECORDINGS**

The use of recordings will enable you to have access to class lectures, group discussions, and so on in the event you miss a synchronous or in-person class meeting due to illness or other extenuating circumstance. Our use of such technology is governed by the Federal Educational Rights and Privacy Act (FERPA) and UTEP's acceptable-use policy. A recording of class sessions will be kept and stored by UTEP, in accordance with FERPA and UTEP policies. Your instructor will not share the recordings of your class activities outside of course participants, which include your fellow students, teaching assistants, or graduate assistants, and any guest faculty or community-based learning partners with whom we may engage during a class session. **You may not share recordings outside of this course.** Doing so may result in disciplinary action.

### **COVID-19 PRECAUTIONS**

You must STAY AT HOME and REPORT if you (1) have been diagnosed with COVID-19, (2) are experiencing COVID-19 symptoms, or (3) have had recent contact with a person who has received a positive coronavirus test. Reports should be made at [screening.utep.edu](https://screening.utep.edu). If you know of anyone who should report any of these three criteria, you should encourage them to report. If the individual cannot report, you can report on their behalf by sending an email to [COVIDaction@utep.edu](mailto:COVIDaction@utep.edu).

For each day that you attend campus—for any reason—you must complete the questions on the UTEP screening website ([screening.utep.edu](https://screening.utep.edu)) prior to arriving on campus. The website will verify if you are permitted to come to campus. Under no circumstances should anyone come to class when feeling ill or exhibiting any of the known COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, and alternative instruction will be provided. Students are advised to minimize the number of encounters with others to avoid infection.

Wear face coverings when in common areas of campus or when others are present. You must wear a face covering over your nose and mouth at all times in this class. If you choose not to wear a face covering, you may not enter the classroom. If you remove your face covering, you will be asked to put it on or leave the classroom. Students who refuse to wear a face covering and follow preventive COVID-19 guidelines will be dismissed from the class and will be subject to disciplinary action according to Section 1.2.3 *Health and Safety* and Section 1.2.2.5 *Disruptions* in the UTEP Handbook of Operating Procedures.

**(classes with on-campus meetings)** Please note that if COVID-19 conditions deteriorate in the City of El Paso, all course and lab activities may be transitioned to remote delivery.

**Course Resources:** Where you can go for assistance

UTEP provides a variety of student services and support:

Technology Resources

- **Help Desk:** Students experiencing technological challenges (email, Blackboard, software, etc.) can submit a ticket to the UTEP Helpdesk for assistance. Contact the Helpdesk via phone, email, chat, website, or in person if on campus.

Academic Resources

- **UTEP Library:** Access a wide range of resources including online, full-text access to thousands of journals and eBooks plus reference service and librarian assistance for enrolled students

**University Writing Center (UWC):** Submit papers here for assistance with writing style and formatting, ask a tutor for help and explore other writing resources.

- **Math Tutoring Center (MaRCS):** Ask a tutor for help and explore other available math resources.

- **History Tutoring Center (HTC):** Receive assistance with writing history papers, get help from a tutor and explore other history resources.

- **RefWorks:** A bibliographic citation tool; check out the RefWorks tutorial and Fact Sheet and Quick-Start Guide.

### Individual Resources

- [Military Student Success Center](#): Assists personnel in any branch of service to reach their educational goals.
- [Center for Accommodations and Support Services](#): Assists students with ADA-related accommodations for coursework, housing, and internships.
- [Counseling and Psychological Services](#): Provides a variety of counseling services including individual, couples, and group sessions as well as career and disability assessments.