

The University of Texas at El Paso
College of Health Sciences
Doctor of Physical Therapy Program

PT 6216

Research Methods

Summer 2023

COURSE SYLLABUS

Credit Hours: 2

Contact Hours: Total: 30 hours (9 weeks plus final exam)
Lecture: 30 hours; Lab: 0 hours; Clinic: 0 hours

Schedule: Tuesdays & Thursdays 1:00pm-2:30pm (except where indicated in **RED** on syllabus schedule & Blackboard)

Instructors:

Faculty: Kosaku Aoyagi, PT, MSc, PhD
Office location: Mesa Building 115D
Office Phone #: 915-747-8215
Cell Phone #: 312-257-7638 – for URGENT use only
E-mail: kaoyagi@utep.edu (best way to contact me)
Office hours: Appointment Only

Course Description: Basic research methods, measurement protocols, and applied statistics, for the purpose of critiquing scientific literature are introduced. Research design (experimental and non-experimental) and common statistical tests (parametric and nonparametric) are reviewed. The course emphasis is on the critique and application of research literature.

Course Prerequisites for DPT Students: The UTEP DPT Program curriculum is a lock-step curriculum. Therefore, students must pass all courses in the prior semester of the DPT Program in order to enroll in courses in the subsequent semester. Faculty may consider exceptions for PT 6116 PT Capstone Project I and PT 6117 PT Capstone Project II.

Course Objectives: Upon successful completion of this course, the student will be able to:

1. Explain the relevance of research to clinical practice. (7B Evidence-based practice; 7D11) [Comprehension]

01/10/2023

2. Identify the responsibilities of researchers and institutional review boards to ensure ethical research practice, and appropriate actions if unethical research practices are observed. (7B Evidence-based practice; 7D6) [Comprehension]
3. Use appropriate search engines and databases to access peer-reviewed scientific literature. (7B Evidence-based practice; 7D9; 7D11) [Application]
4. Differentiate between quantitative and qualitative research paradigms. (7B Evidence-based practice; 7D9; 7D11) [Analysis]
5. Differentiate between various research designs. (7B Evidence-based practice; 7D9; 7D11) [Analysis]
6. Identify how research designs and methods control for bias. (7B Evidence-based practice; 7D9; 7D11) [Comprehension]
7. Appraise peer-reviewed scientific literature. (7B Evidence-based practice and applied statistics; 7D9; 7D11) [Evaluation]
8. Interpret results of various parametric and nonparametric statistical tests. (7B Evidence-based practice and applied statistics; 7D9; 7D11) [Application]

Curricular Threads

- **Cultural / Linguistic Engagement and Competence:** n/a
- **Evidence-Based Practice and Research:**
 - The entirety of the course contributes towards the development of students' research methods knowledge and skills, which support future evidence-based practice.
- **Clinical Reasoning:**
 - Through the development of research methods knowledge and skills, students improve their ability to develop hypotheses, synthesize knowledge, and use current evidence – which are key elements of clinical reasoning.
- **Interprofessional Collaborative Practice:** n/a

Methods of Instruction: Primarily active-learning activities, including: analysis of research articles, small & large group discussions and writing assignments.

Methods of Evaluation: Student competence and attainment of course objectives are assessed using a variety of methods. These methods and their contribution to the final grade are listed in the table below. More details regarding assignments and assessments are found at the end of this syllabus after the Course Schedule.

Item	Grade Composition
IRB Training Completion	5%
Written Exam 1*	20%
Written Exam 2*	20%
Oral Demonstration of Research Knowledge (aka "Oral Defense")	20%
Final Exam*	35%
Total	100%

If you get a grade below an 80% on any exam or assignment worth 5% or more of the course grade, you are required to arrange a meeting with me and work out study strategies to improve your performance.

***All exams will require you to use Respondus LockDown Browser.**

Go to the following link to learn more and to download the software:

https://www.utep.edu/technologysupport/ServiceCatalog/BB_Tool_RespondusLockdown.html

Grading Scale: The following letter grade scale is used for the UTEP Doctor of Physical Therapy Program:

<u>Letter Grade Scale</u>	<u>Numerical Grade Scale</u>
A	90-100
B	80-89
C	75-79
F	Below 75

Required Textbooks and Other Learning Resources:

- 1) UTEP Librarian for the College of Health Sciences
Angela Lucero
ajmartinez5@utep.edu
Phone: 915-747-5685
Office: Library 214
- 2) Jewell DV. *Guide to Evidence-Based Physical Therapist Practice*. 5th ed. Burlington, MA: Jones & Bartlett Learning; 2023. ISBN-13: 978-1-284-10432-5

- 3) American Medical Association. *AMA Manual of Style: A Guide for Authors and Editors*. 11th ed. New York City, NY: Oxford University Press; 2020.
 - Available for *free* to UTEP students through UTEP Library
 - Go to <https://libguides.utep.edu/pt>
 - *You will use AMA for ALL formal writing assignments while in the DPT Program*
- 4) See Blackboard for further required readings; students will need to access these readings through the American Physical Therapy Association (APTA) website and/or UTEP Library.
- 5) To understand what a systematic review is, see “What is a Systematic Review?” at <http://libguides.utep.edu/ptsr>
- 6) To learn how to write a PICO question, see “Preparing for a SR” at <http://libguides.utep.edu/ptsr>
- 7) To learn how to find evidence to answer your PICO question, see “Find the Evidence” at <http://libguides.utep.edu/ptsr>
- 8) To learn how to appraise an article, see “Appraise/Analyze” at <http://libguides.utep.edu/ptsr>

Recommended Textbooks and Other Learning Resources:

- 1) Gough D, Oliver S, Thomas J. *An Introduction to Systematic Reviews*. London: SAGE Publications; 2012. ISBN-13: 978-1473929432
 - Available for FREE check-out in the DPT Program’s Administrative Assistant’s office

Resources Available for Student Success:

Confidential Resources:

- **Center for Accommodations and Support Services (CASS):** If you have or suspect a disability and need accommodations, you should contact the Center for Accommodations and Support Services (CASS) at 747-5148. You can also e-mail the office at cass@utep.edu or go by their office in Union Building East, room 106 (next to the UTEP post-office). For additional information, visit the CASS website at <http://sa.utep.edu/cass>.
- **The UTEP Student Health Center:** Union East Suite 100; 915.747.5624; www.utep.edu/chs/shc
- **The UTEP Counseling and Psychological Services:** 202 Union West, 915.747.5302; www.utep.edu/student-affairs/counsel

Additional Resources:

- Division of Student Affairs. 915.747.5076, www.utep.edu/student-affairs
- DPT Library Research Guide: <http://libguides.utep.edu/pt>
- Writing Center: 915.747.5112. <https://uwc.utep.edu>

- Computer Labs: Independent Learning Center (ILC), 1st floor Campbell Building
- Military Student Success Center: 915.747.5342, www.utep.edu/student-affairs/mssc
- Student Wellness Program. 915.747.6738, www.utep.edu/chs/wellness

University Policies: All students are responsible for following UTEP policies and procedures found in the Handbook of Operating Procedures at www.utep.edu/vpba/hoop

Program Policies: All DPT students are responsible for following all policies and procedures documented in the current DPT Student Handbook. Course policies found in the DPT Student Handbook apply to all courses in the DPT curriculum. The current DPT Student Handbook may be found on the DPT Student Resources site on Blackboard.

Academic Integrity: The UTEP DPT Program has a “zero tolerance policy” for scholastic dishonesty. DPT students must demonstrate academic integrity at all times. The current DPT Student Handbook outlines specific definitions, expectations, details, and consequences related to academic integrity and scholastic dishonesty. Additional information related to academic integrity is available through the UTEP Division of Student Affairs at www.utep.edu/student-affairs/osccr/student-conduct/academic-integrity.html

Course-Specific Policies: See DPT Program Handbook for all policies on exams, electronic device use, dress code, attendance, and scholastic dishonesty. Your instructors encourage you to periodically review all handbook policies, but in light of past experiences, particularly direct you to review the policies on cheating, accumulated knowledge, professional behaviors/generic abilities, attendance, and the disclaimer that the syllabus is subject to change.

1. **Attendance Policy - Absences:** Refer to current DPT Student Handbook “Attendance and Classroom Behavior” for the DPT Program policy. Additional course-specific policy are as follows:
 - As all Program faculty do, I believe that students should demonstrate their commitment to the profession and respect for faculty, guest speakers, and colleagues by attending all classes, and arriving to class on time. I am expected to be at class as scheduled and to be on time; I expect the same from you. I work hard to prepare for classes, and to make them productive active-learning opportunities; I expect you to do your part by being prepared and regularly participating. I do NOT give credit for this...I expect it. Failure to arrive to class prepared and on time, and to not participate actively, and to fail to demonstrate professional behaviors may result in deductions to your final semester grade.
 - However, congruent with one’s ability to request excused time off in the work setting, I permit ONE excused absence of a single class* period per course per semester for any reason. In order for your first absence to be excused, you must meet the expectation described further down. HOWEVER, except for very rare exception [eg,

documented serious illness or emergency] that will be considered on a case-by-case basis, there will be NO accommodations offered for missed class time. Specifically, I will NOT offer the opportunity to make up in-class quizzes or written examinations, either in advance or after the scheduled class, or provide individual tutoring for missed content. Additionally, late work caused by your absence will not be accepted. You should make prior arrangements with a classmate to find out what you missed, turn in any work, and/or pick up any hand-outs. (*NOTE: Single class is defined as 1.5 hours).

- In order to be excused for your first missed class or lab, you must do the following: Email me at cmpechak@utep.edu at least 2 hours in advance if you will not be attending class. I do not require you to give me a reason, but I expect notice in WRITING by email. A phone call from you or message from one of your classmates is not acceptable.
 - If you miss a second (or more) class for any reason, it will be considered unexcused unless it is due to documented illness or emergency. In these cases, you should email me and then arrange a meeting with me upon your return to school to discuss why you missed class. Documentation will be required for any additional absence (eg, doctor's note documenting illness or treatment). I will notify you after our meeting and review of your documentation whether or not the absence will be considered excused or unexcused.
 - Missing 50% or more of a class will be considered an absence.
 - For each incident of an unexcused absence, 5% will be deducted from your final semester grade.
2. **Attendance Policy - Tardiness & Early Departures:** Refer to current DPT Student Handbook "Attendance and Classroom Behavior" for DPT Program policy. Additional course-specific policy is as follows:
- I use the clock on the computer to determine when class should start and end. If you expect to arrive late or leave early (eg, doctor's appointment), you should notify me in writing by email in at least 2 hours in advance. If you are consistently late &/or leaving early for any reasons, I will contact you to meet with me to discuss the problem in person or by email. Each subsequent incidence of tardiness &/or early departure may result in 1% deduction from your final semester grade.
 - **NOTE:** *Being "on time" in the online learning environment means that you have arrived into the virtual classroom & are fully "connected" PRIOR to the start of class.*
3. **Electronic Devices:** Refer to current DPT Student Handbook "Electronic Devices" for DPT Program policy. Additional course-specific policy is as follows:
- If you are using cell phones, computers, &/or other electronic devices for purposes that are not directly related to meeting the learning objectives of this course, then I consider that to be disruptive behavior. Personal calls, texts, &/or emails should be completed outside of class time. See Professional Behavior Policy below.

4. **Professional Behavior Policy:** See DPT Student Handbook “Attendance and Classroom Behavior”, “Professional Behaviors” and “Unprofessional Behavior:” for general program policy. Additional course-specific is as follows:
 - I expect you to arrive to class prepared and to actively participate while not being disruptive. If you are consistently ill-prepared, not actively participating, and/or being disruptive, I will contact you to meet with me to discuss the problem in person or by email. Each subsequent incidence of poor preparation, poor participation, and/or disruption may result in 1% deduction from your final semester grade.
 - University spaces are intended to be safe, welcoming environments that support learning and are respectful of all individuals. Discrimination or harassment based on cultural beliefs, gender identity, sexual orientation, or personal viewpoints will not be tolerated. Diversity is a welcome part of all learning settings. Any direct or indirect instances of discrimination should be reported to Dr. Pechak immediately.
 - **NOTE:** *The online learning environment is generally not optimally conducive to promoting a professional environment. Dogs bark and kids scream, and most of us have “offices” in bedrooms. I understand that flexibility is necessary. However, I expect students to be sitting or standing upright during class – as opposed to lying down. Lying down would not be acceptable in a face-to-face classroom. Additionally, I expect your cameras to be turned on so that we may maximize our engagement with each other; I consider having your camera on to be a component of active participation. Mute your microphone when you are not contributing to the discussion in the virtual classroom to avoid being unnecessarily disruptive. If you must “leave” briefly (eg, to go to the toilet), then please use the relevant online symbol to indicate to me that you have “stepped out” or send me a private message in the Chat box.*
 - *If your Internet bandwidth is too poor to allow consistent use of video, please contact me to discuss it.*
5. **Late or Missed Assignments and Assessments Policy:** See current DPT Student Handbook “Written Examination Policy”. Additional course-specific policy is as follows:
 - No opportunities will be provided for missed examinations unless it is for an excused reason (eg, documented medical emergency).
 - All written assignments are due at the date and time indicated. Assignments submitted after deadline time but on the due date will result in a 25% deduction due to the late submission. Assignments submitted after the due date will result in ZERO credit.
6. **Skills Check Policy:** not applicable
7. **Practical Exam Policy:** not applicable

Course Content and Schedule: (Note: Students will be notified of changes via Blackboard &/or email).

MODULE and DATES	RESEARCH METHODS TOPICS	READINGS & PREPARATION	ASSIGNMENTS/EXAMS
Module 1 6/6, 8	Overview of Evidence-Based Practice Scientific Method	Ch 1-3 See links on p 4 above for the following resources: Online resource for Quoting & Paraphrasing Online resource for Primary & Secondary Sources	
Module 2 6/13, 15	Research questions & hypotheses	Ch 4 Reading assignment may be provided by the instructor	
Module 3 6/20, 22	Research questions Study design subjects/participants	Ch 5, 6, 9, 10 Reading assignment may be provided by the instructor	<u>TUESDAY, 6/20:</u> <u>IRB Certificate of Completion due by NOON on Blackboard</u> <u>Late zssion will result in a grade point deduction</u>
			6/26, MON: EXAM 1 (MODULES 1-3) Bring fully-charged laptop and have most current version of Respondus LockDown Browser on your computer
Module 4 6/27, 29	Variables, validity, reliability	Ch 7, Ch 8, Ch 9 Reading assignment may be provided by the instructor	
Module 5 6/30, Friday 8-11 (8-9:30 Dr. Aoyagi,	Research Design: Qualitative vs Quantitative	Ch 5 Reading assignment may be provided by the instructor	

9:30-11:00, Dr. William)			
Module 6 7/6, 12-3	Research Design & Research Validity	Ch 8, 10 Reading assignment may be provided by the instructor	
			7/10, MON, 1-3, MONDAY: EXAM 2 (Modules 1-6, with emphasis on Modules 4-6)
Module 7 7/11, 7/13	Research Design & Research Validity Parametric & non-parametric stats related to differences, relationships, prediction	Ch 5, 9, 10, 11 Reading assignment may be provided by the instructor	
Module 8 7/18, 7/20	Intro to Article Appraisal Intro to Writing PICO question Overview of Systematic Review & Meta-Analysis	Reading assignment may be provided by the instructor	
Module 9 7/25, 7/27 Oral Defense	Go to the "Oral Defense" folder under the Important Information folder for instructions, schedule, etc.		
			FINAL EXAM: 7/31, Mon, from 1-3 pm (Cumulative) – Using your laptop and Respondus Lockdown

INSTITUTIONAL REVIEW BOARD (IRB) TRAINING: All students must complete IRB training so that everyone has baseline knowledge of ethical conduct related to research. Additionally, for those students who will do original research with faculty mentors for their Capstone Project, they will already have the required training done. To access the required training for the "CITI Program", see <https://www.utep.edu/orsp/human-subjects-research/training/index.html>

- You will need to register and create an account.
- Choose "Add a Course" under "Learner Tools for University of Texas at El Paso"
- Then choose "Human Subjects Research"
- Then choose "Nursing, Pharmacy & Allied Health Researchers"
- Complete all modules

- Submit the certificate of completion to Dr. Aoyagi via Blackboard (assignment folder) on date indicated on course schedule

ORAL DEMONSTRATION OF RESEARCH KNOWLEDGE (ORAL DEFENSE): Each group of students will develop a PICO question relevant to physical therapist practice; will identify a research article that answers this question; and will formally appraise the article using a standardized method, including identifying strengths and weaknesses of the article and future directions. See “Assignments” section on course schedule for due date. Then, for the Oral Defense, each student will orally answer research concept questions related to their Team’s PICO and the article that the group appraised. See Blackboard for schedule and more details.