

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

PT 5216

Research Methods

Summer 2018

COURSE SYLLABUS

**Credit Hours:** 2

**Contact Hours:** 30 (10 weeks)

**Schedule:** Mondays 1:30pm-2:50pm in Campbell Room 115

Wednesdays 1:00pm-2:20pm in Campbell Room 115

EXCEPT where noted on the schedule for Weeks 1 & 6

NOTE: If other changes occur in the schedule, it will be noted on Blackboard

*Optional Review Session:* Wednesdays 4:00pm-5:00pm in Room 115 (except where noted on Blackboard)

**Instructor:** Celia Pechak, PT, PhD, MPH

Office: Campbell Room 311

Office hours: In lieu of scheduled office hours, I have scheduled an optional weekly review session as I have found that students use my review sessions more consistently than office hours. However, students may also email me for individual appointments on any day *except* Thursdays (unless there is an urgent need to meet). I am very happy to meet with you to help you learn the course content! Bring your questions.

e-mail: [cmpechak@utep.edu](mailto:cmpechak@utep.edu) (email is the best way to contact me) & office phone: 915-747-7289

**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 Objectives:**

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

1. Explain the relevance of research to clinical practice. (CAPTE 7D11)
2. Identify appropriate actions by institutional review boards, researcher(s), and other research collaborators to ensure ethical practice in research. (CAPTE 7D6)
3. Access peer-reviewed scientific literature using appropriate search engines and databases. (CAPTE 7D9)
4. Differentiate between quantitative and qualitative research paradigms. (CAPTE 7D9)
5. Distinguish between various research designs. (CAPTE 7D9)
6. Identify how research designs and methods control for bias. (CAPTE 7D9)
7. Critically appraise peer-reviewed scientific literature. (CAPTE 7D9)
8. Interpret results of various parametric and nonparametric statistical tests. (CAPTE 7B)
9. Describe elements of a research manuscript. (CAPTE 7D9)

**Required Text:**

Jewell DV. *Guide to Evidence-Based Physical Therapist Practice*, 4<sup>th</sup> Ed. Burlington, MA: Jones & Bartlett Learning; 2018. ISBN-13: 978-1-284-10432-5

**Required Readings:**

<https://owl.english.purdue.edu/owl/resource/563/01/>  
<http://www.ithacalibrary.com/sp/subjects/primary>

Further readings to be posted – see Blackboard – students will need to access these readings through American Physical Therapy Association (APTA) website and/or UTEP Library.

**Supplementary Sources: (NOT required)**

Portney LG, Watkins MP. *Foundations of Clinical Research: Applications to Practice*. 3<sup>rd</sup> Ed. Philadelphia, PA: FA Davis Co; 2015. ISBN-13: 978-0-8036-4657-5

Fettters L, Tilson J. *Evidence Based Physical Therapy*. Philadelphia, PA; FA Davis; 2012. ISBN-13: 978-0-8036-1716-2

**Methods of Instruction:**

Primarily active-learning activities, including: analysis of research articles, small & large group discussions, writing assignments, & participation in a research project as participant and researcher

## Methods of Evaluation:

Graded activities and their weight are as follows:

Blackboard Quizzes	0%
Exam 1	20%
Exam 2	25%
Final Exam	30%
IRB Training Completion	5%
Group Mini-Research Manuscript (group grade)	10%
PICO Question & Article Appraisal (group grade)	5%
Oral Demonstration of Research Knowledge (aka “Oral Defense”) (individual grade)	5%

**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.**

**QUIZZES** – Quizzes will be available on Blackboard for your practice. The online quizzes may be taken multiple times, and are for your learning purposes only. These do NOT count toward your course grade. These also do NOT reflect the full depth of understanding that you will be tested on. The in-class activities are a better representation of the depth at which you should study.

**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 have the opportunity to do independent research with faculty mentors, they will already have the required training done. To find instructions for accessing the training, see <http://research.utep.edu/Default.aspx?tabid=72173>

- Make sure to complete all modules required for: **Health Sciences (faculty & students)-CHS/SON**
- Submit the certificate of completion to Dr P in hard copy on date indicated on course schedule below

**GROUP MINI-RESEARCH MANUSCRIPT:** In assigned groups of 4, students will write a manuscript that describes the research project being carried out in this course. See “Assignments” section on course schedule for due dates and instructions on Blackboard for content information.

**PICO QUESTION & ARTICLE APPRAISAL:** In student-selected groups of 9, students will develop a PICO question relevant to physical therapist practice, identify a research article that answers this question, and formally appraise the article using a standardized method. See “Assignments” section on course schedule for due dates and see Blackboard for more information.

**ORAL DEMONSTRATION OF RESEARCH KNOWLEDGE (ORAL DEFENSE):** Each student will orally answer research concept questions related to his/her group’s PICO and the article that the group appraised. See Blackboard for schedule and more details.

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**EXTRA CREDIT:** If you wish to earn 2 extra-credit points that can be applied to the Final Exam, do the following (AFTER completing your online IRB training):

- Visit the El Paso Holocaust Museum (it is close to Campbell Building)
- Take a photo of yourself in the lobby of the museum & attach to end of the written reflection
- Tour the museum in its entirety
- Create a 1-2 page **single-spaced** Word document (plus title page), using 11-12 font size and standard 1" margins, that addresses the following content:
  - Brief introduction to the paper
  - Briefly summarize your experience of visiting the Holocaust Museum – including identifying the particular exhibit that most impacted you and why
  - Briefly explain how the research practices during the Holocaust have impacted rules governing current research (make sure to include discussion of the Nuremberg Code)
  - Read the following statement and briefly argue if it is or is not related to academic misconduct in the classroom and/or unethical practice in the clinic:
    - “The atrocities of the Holocaust could not have been carried out without many people turning a “deaf-ear” or “blind-eye” to the unethical and immoral actions of others.”
  - Brief conclusion
- Submit a hard copy at the beginning of the last class meeting

All written assignments are due prior to the end of class on the date indicated. Assignments submitted after class 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.

#### **UTEP DOCTOR OF PHYSICAL THERAPY PROGRAM GRADING SCALE**

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

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

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**Course Content:** Refer to topic outline below

**Course and Program Policy:** 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, generic abilities, attendance, and the disclaimer that the syllabus is subject to change.**

**Attendance, Tardiness, Class Participation, and Professional Behaviors Policy:**  
(this is in addition to what is found in Student Handbook, and is specific to Dr Pechak's courses)

**ATTENDANCE:**

As all program faculty members 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 fully 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 (with 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 videoing, written examinations, etc, either in advance or after the scheduled class/lab, 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.

In order to be excused for your **first** missed class, you must do the following:

- Email me at [cmpechak@utep.edu](mailto:cmpechak@utep.edu) at least 2 hours in advance if you will not be attending class or lab. 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 one hour or more of a class will be considered an absence – during any part of the class.

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For each incident of an unexcused absence, 5% will be deducted from your final course grade.

**TARDINESS &/OR EARLY DEPARTURE:**

I use the clock on the computer to determine when class should start and end. If you expect to arrive late (eg, doctor's appointment), you should notify me in writing by email at least 2 hours in advance. Similarly, if you need to leave class early, I should be notified in writing at least 2 hours prior to the start of class. Each subsequent incidence of tardiness or early departure may result in 1% deduction from your final course grade.

**PARTICIPATION and PROFESSIONAL BEHAVIORS:**

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. Participating in online chatting, texting, checking social media sites, and other related activities is NOT actively participating in class; additionally, it is considered poor professional behavior and disrespectful to the instructor or other presenters. Each subsequent incidence of poor preparation, poor participation, and/or disruption may result in 1% deduction from your final course grade.

**Special Accommodations (ADA):**

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](mailto:cass@utep.edu) or go by their office in Union Building East. For additional information, visit the CASS website at <http://sa.utep.edu/cass/>

**STATEMENT ON INCLUSIVITY:**

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 the instructor as soon as possible.

**Tentative Topic/Assignment Outline:**

**\*\*Times, dates, and reading assignments are subject to change although every effort will be made to minimize any changes – watch Blackboard for any changes.**

WEEK	RESEARCH METHODS TOPICS	STATISTICS TOPICS	ANALYSIS OF RESEARCH ARTICLES	READINGS & PREPARATION	ASSIGNMENTS (due at start of class on day indicated)	EXAMS
<b>1</b> <b>W</b> <b>May 30</b> <b>2:30-4pm</b> <b>&amp;</b> <b>FRIDAY</b> <b>June 1</b> <b>8:30-9:50am</b>	Overview of Evidence-Based Practice  Scientific Method  Ethical considerations in research & IRB  <i>Class of 2021 Research Methods Study:            Sample demographics            Pre-test            Pre-questionnaire</i>	Quantitative data vs Qualitative data	Overview of peer-reviewed article  Research vs non-research articles  Research article components: BACKGROUND Problem statement PURPOSE	Ch 1-3  See links on p 2 above for the following resources:  Online resource for Quoting & Paraphrasing  Online resource for Primary & Secondary Sources		
<b>2</b> <b>M&amp;W</b> <b>June</b> <b>4/6</b>	Research questions & hypotheses	Null hypothesis & its relevance to statistical significance	RESEARCH QUESTION(S) HYPOTHESES	Ch 4 Journal articles per BB &/or faculty announcement	MONDAY: <i>Group Background, Problem Statement, and Purpose</i> due  <i>IRB Certificate of Completion</i> due	

<b>3</b> <b>M&amp;W</b> <b>June</b> <b>11/13</b>	Research subjects/participants	Descriptive Statistics	METHODS: Participants	Ch 6, 9 Journal articles per BB &/or faculty announcement	MONDAY: Group <i>Research question(s) and Hypotheses</i> due	WED: EXAM 1 (Weeks 1-3)
<b>4</b> <b>M&amp;W</b> <b>June</b> <b>18/20</b>	Variables, validity, reliability	Statistics to determine reliability & validity: tests of relationships	METHODS: Procedure	Ch 7, Ch 10 pp 182-184 Journal articles per BB &/or faculty announcement	MONDAY: Group <i>Participant</i> section due	
<b>5</b> <b>M&amp;W</b> <b>June</b> <b>25/27</b>	Research Design: Qualitative vs Quantitative		DATA ANALYSIS Role of the Funding Source	Ch 5, 9 Journal articles per BB &/or faculty announcement	MONDAY: Group <i>Procedure</i> section due	
<b>6</b> <b>M&amp;Th</b> <b>July</b> <b>2/5</b> <b>TH</b> <b>class is</b> <b>1:00-</b> <b>2:20pm</b>	Research Design & Research Validity	Parametric & non-parametric stats related to differences, relationships, prediction		Ch 8, 10 Journal articles per BB &/or faculty announcement		WED: EXAM 2 (Weeks 1-6, with emphasis on Weeks 4-6)
<b>7</b> <b>M&amp;W</b> <b>July</b> <b>9/11</b>	Research Design & Research Validity	Parametric & non-parametric stats related to differences, relationships, prediction	RESULTS & DISCUSSION Study Limitations	Ch 8, 10 Journal articles per BB &/or faculty announcement	MONDAY: Group <i>Data Analysis</i> due	



<b>8</b> <b>M&amp;W</b> <b>July</b> <b>16/18</b>	Intro to Article Appraisal Intro to Writing PICO question Overview of Systematic Review & Meta-Analysis	Statistics used in meta-analysis	Systematic Review		MONDAY: Group <i>Study limitations</i> due  WEDNESDAY: PICO question due Article Appraisal due HARD COPY of research article due	
<b>9</b> <b>M&amp;W</b> <b>July</b> <b>23/25</b>	Oral Demonstration of Research Knowledge (Individual “oral defense”)	Each individual should arrive prepared to orally explain key research concepts as described on Blackboard. See Blackboard for your scheduled time and day. <b>You ONLY need to attend during your scheduled time this week.</b>				
<b>10</b> <b>M&amp;W</b> <b>July 30</b> <b>&amp;</b> <b>Aug 1</b>		Address areas of weakness / confusion identified during the oral defense last week. Review and synthesis of other course topics in preparation for the final exam.				
<b>FINAL EXAM: Thursday Aug 2, from 1-4pm (Covers Weeks 1-10, with emphasis on Weeks 6-10)</b>						