

THE UNIVERSITY OF TEXAS AT EL PASO
Bachelor of Rehabilitation Sciences
DRSC 4301- Scientific Inquiry in Rehabilitation Sciences
Spring 2019 Syllabus

Course Number: DRSC 4301

Course Title: Scientific Inquiry in Rehabilitation Sciences

Class Time: Wednesday from 12:00 to 2:50 pm

Course Location: HSSN 211

Credit Hours: 3

Instructor: Carolina Valencia, PhD

Instructor Office: HSSN #488

E-mail: cvalencia4@utep.edu

Phone: (915) 747-8328

Office Hours: Wednesday 11:00am – 12:00pm or **by appointment**

Catalog Course Description: Introduction to research designs and methods used in the health and rehabilitation sciences. Principles of evidence based practice and lifelong learning in the rehabilitation sciences. Use of systematic approaches to review, summarize, and critique scientific literature. Management and analysis of data using statistical programs to answer common clinical research questions.

Course Goals:

1. Provide an overview of the research process, including literature review, research design, instrumentation, measurement, statistics, data analysis and interpretation, protection of human subjects and other ethical issues.
2. Provide opportunities to examine ethical and legal issues involved in the research process.
3. Introduce evidence-based practice and levels of evidence.

Learner Objectives. At the completion of this course, students will be able to:

1. Demonstrate a beginning competency for conducting an integrated review of the scientific literature specific to a proposed research question
2. Evaluate the fit between study designs and research questions and objectives.
3. Articulate various experimental designs and their applications to selected research questions.
4. Discuss issues related to instrument use in data collection.
5. Discuss the relationship between levels of measurement and selection of statistical procedures.
6. Provide rationale for selection of statistics for selected experimental studies.
7. Interpret basic statistical findings from selected experimental studies.
8. Discuss protection of rights of human subjects and animals in research
9. Analyze cultural, legal and ethical issues related to the conduct of research studies.

Required Readings:

Required Text:

American Psychological Association, (2009) *Publication Manual of American Psychological Association (5th ed.)* Washington, D.C: Author.

Hoffmann, Bennett, Del Mar; Evidence-Base Practice Across the Health Professions. 3rd edition. Churchil Livingstone, NY.

Optional:

Jewell, D. (2008). Guide to Evidence-Based Physical Therapist Practice, 2nd Edition. Jones & Bartlett Publishers

Garrard, J. (2006). *Health Sciences Literature Review Made Easy: The Matrix Method*, 2nd Edition . Jones & Bartlett Publishers: St. Louis, MO.

Shamoo A, Khin-Maung-Gyi FA. (2002) Ethics of the Use of Human Subjects in Research.

Readings will be provided to students electronically or in hard copy. Weekly articles, monographs, reports and web-based presentations will be assigned. Students are required to read these and be prepared to discuss them during class. Students are expected to research and find resources required for assignments.

Format: The course is interactive format where faculty will provide a structure and format for class sessions and students are expected to come prepared, make an active, significant contribution to the discussions. Students have the responsibility for demonstrating their knowledge of assigned readings which are expected to be completed PRIOR to the session assigned. The course also includes several student presentations and in-class activities.

Blackboard: The electronic platform for this course will be Blackboard. Students are responsible for checking Blackboard daily for course announcements and updates through the my.utep.edu portal. Blackboard is the main source of communication between faculty and students. Students are encouraged to access this site daily. Course syllabus, calendar, topical outline of scheduled lectures, and assigned readings are posted on this site. Grades will be made available ONLY through this site. Important announcements for this class will be send through “Blackboard announcement” and will go directly to your email. **Please check your email every day for any communication.**

Course Expectations:

To assure the objectives of this class are attained students are encouraged to:

- Review material that will be discussed in class prior to each class.
- Review material following class and ask the professor questions about any uncertain points in the ensuing class, or review sessions.
- Be active participants during class. This can be done by answering questions proposed by the professor, making eye contact with the professor, taking notes, and asking questions.
- Submit all papers in proper APA (5th ed.) format, and **proofread**. Papers will be evaluated by these standards.
- Submit all assignments/projects by the due dates identified on this syllabus. Late assignments will not be accepted
- Students should expect to consult the instructor regularly during office hours or at another scheduled time

Class Participation. Active participation in this course is very important. Students should be prepared to come to class to discuss, answer questions, and participate in all class activities.

Note: Participation is a key part of this course. Each day of unexcused absence will result in a 1-point (1%) reduction in the overall course grade. Each incident of tardiness/leaving early resulting in missing more than 30 minutes of the class session will result in a one-point (1%) deduction from the overall course grade.

iClicker Cloud

I will be using a cloud-based student response software by iClicker in class this semester. This will help me understand what you know, give everyone a chance to participate in class, and allow you to review the material after class. I will be using this software to keep track of attendance; please refer to the attendance policy of this syllabus.

You will need to create an iClicker Reef Student account to participate in class using your laptop, smart phone, or tablet connected to the university's Wi-Fi (UTEPSecure) or to your mobile data plan.

Creating Your iClicker REEF Student Account through Blackboard

Sign in to Blackboard and click my course [**DRSC 4301_Scientific Inquiry in Rehabilitation Sciences_Spring 2019**]. Search for the iClicker REEF icon, this should be on the Home Page. Click this link to launch a special instance of REEF, then log in or create a new REEF account if you don't already have one. You should use your university email address (username@miners.utep.edu) when creating your account. If you need to change your email address or password, edit your REEF account profile. Signing into REEF through the link in Blackboard will automatically add you to my course.

Note: You will not need to purchase a subscription to use iClicker REEF this semester because it is provided to you for free.

Total Grade Points.

A (>90 %),
B (80-89%),
C (70-79%),
D (60-69%) and
F (< 60%).

Letter grades based on this distribution will then be assigned each student.

Notes:

- Grades will not be adjusted for individuals.
- If you need help with class, come to the professor as soon as possible.
- Remember: Grades are earned by the student, not given by the professor
- All assignments should be typed and handed in on time.
- Academic integrity policies apply to each assignment.
- If confused of when collaboration is allowed and not allowed, clarify first!

Course grades will be calculated using the following weights:

Assignment	Weight of Assignment
A. Tests (2)	30%
B. Completion of 2 projects	14%
C. Literature Review and research question	15%
D. Students Topic Presentation	15%
E. CITI training	6%
F. Final Exam	20%
Total	100%

Course Assignment Descriptions:

A. Tests

The two tests in the course will consist of true/false, multiple choice, fill in the blank, short answer, and research development question formats. While each exam will consist primarily of material in the corresponding section of the course, the content of the second and exam will build upon important cumulative concepts.

B. Projects

Each project is to be completed individually, these are not group projects!

Project #1 – Involves the calculation and interpretation of measures of central tendency, variance, and correlation from a sample database using Excel, or SPSS software. Project #1 will be **due on February 13th**. This is an **INDIVIDUAL PROJECT**

Project #2 – Involves the interpretation of a diagnostic journal article. Project #2 will be assigned on March 27th and will be **due before class on April 4th**. **INDIVIDUAL PROJECT**

C. Literature Review

Students will create a brief Literature Review (5 pages) (Literature Review- foundation and support for a research project or case study. Your 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). Literature Review should include information found from preliminary literature searches. At least 10 references need to be included and cited within your writing and cited at the end. **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 will be 5 pages in length. Please format in a professional manner (AMA, APA) and cite your sources accordingly. Originality reports generated by **www.turnitin.com** that are above 40% will be marked down by 50%. Students will have 20% discount if the paper is submitted one day after the deadline, 40% after 2 days, etc. **INDIVIDUAL PROJECT**

D. Topic Presentation

The student led presentations will be expected to last a minimum of 15 minutes and a maximum of 20 minutes. This time includes the presentation, discussion, and question/answer period. There is no standard format for the presentations, but students are encouraged to use methods that appeal to a wide range of learning styles and have fun (within reason while remaining professional). The students are expected to find and discuss 1-2 journal articles relevant to their chosen research area or field of interest. A brief summary of the statistical test (**if you are presenting results, please use graphs or tables from the articles**) and the rationale for its use should be included. The focus is to enable the class to better understand the main topic, rationale and correct use of statistical tests in journal articles they will read as future clinicians.

Students could work in groups and each member of the group will receive the same grade. Grading criteria include 1) Technical aspects of the presentation adhered to guidelines provided in class; 2) Oral presentation demonstrated appropriate skills discussed in class; 3) Content of presentation included a review of relevant journal articles and a brief summary of the statistical test of interest; 4) Creativity and originality; and 5) use of clinical relevant data.

Grading will be on a 0-5 scale for each criterion. Failure to adhere to the time to present of 15-20 minutes will result in a reduction of at least 10% in the score for the group. The instructor will be available for consultation on presentation outside of class time. The goal is to create a student initiated presentation, not an instructor-dictated presentation. **GROUP PROJECT**

E. CITI training

<https://research.utep.edu/Portals/99/Doc/policies/rcr/CIT!%20Instructions%2008-08-13%20v1.pdf>

Select “Responsible Conduct in Research (RCR), then select Social and Behavioral Responsible Conduct of Research Course”

F. FINAL EXAM (Course Objectives 1- 7)

Tentative Course Schedule:

Week	Date	Topic	Assignments/Readings
1	1/23	Syllabus Introduction to Research and The Scientific Method	Hoffmann, Chapter 1
		Populations to samples-how they are obtained and described. Descriptive statistics Inferential statistics	Jewell DV, Chapters 4, 6, 7; 145-156, and 9; 197-206 Roach KE. A clinician's guide to specification and sampling. J Othop Sports Phys Ther 2001;31:753-758
2	1/30	Signal to noise and statistical significance	Sterne JAC and Smith GD. Sifting the evidence – what's wrong with significance tests? BMJ: 2001; 322:226-231 Jewell DV, Chapter 9; 224-227
		Intro to Research designs, research questions, and Common Statistical methods	Jewell DV, Chapter 5; 97-104 Hoffmann chapter 16 Assignment of Project #2
3	2/6	Research Designs- Correlation and reliability	Jewell DV, Chapters 7; 156-160 and 9;208-213.
		Research designs- Comparing means <i>(Check Project #2)</i>	
4	2/13	Introduction to an evidence based approach Levels of Evidence Grading	Jewell DV, Chapters 1, 2, and 8; 169-173. Glaros S. All evidence is not created equal: a discussion of levels of evidence. PT Magazine 2003;Oct:42-52 Project #1 Due
		Finding the evidence Basic Literature Search Strategies Steps in the Literature Search	Hoffmann chapter 3
5	2/20	Test #1	
		Titles and Hypotheses. Developing the Question and Objectives Searching for literature and typical	

		format of scientific article. Identifying the Research Problem Purpose of the Literature Review	
6	2/27	Formulating the Method How to Present Methodological Details Why Planning the Methods Is Important Describing Participants Describing Instruments Describing Procedures Describing Design and Analysis	
		Developing a Scientific Presentation IRB Workshop Cultural, legal, and ethics related to research, conflict of interest	CITI training due (Submit the Certificate of Completion though Blackboard)
7	3/6	BASICS OF CASE STUDIES	
		Validity	Jewell DV, Chapters 7; 160- 167 Irrgang JJ et al. Development of a patient- reported measure of knee function. J Bone and Joint Surg. 1998;80(8):1132-1145 (focus on the reliability and validity parts)
8	3/13	EndNote Workshop	
9	3/20	Spring Break	
10	3/27	Diagnosis Diagnosis workshop	Jewell DV, Chapter 10 Optional: Straus SE et al, Chapter 3. SLAP Lesions paper (The American Journal of Sports Medicine, Vol. 27, No.3) Assignment of Project #2
		Prognosis	Jewell DV, Chapter 11 Levangie PK. Application and interpretation of simple odds ratios in physical therapy related research. J Othop Sports Phys Ther 2001;31:496-503.

11	4/3	Prognosis workshop	
12	4/10	Intervention	Jewell DV, Chapter 12 Dalton GW and Keating JL. Number needed to treat: a statistic relevant for physical therapists. Phys Ther 2000;80:1214-1219.
		Intervention workshop	Project # 2 Due
13	4/17	Test #2	
			Lit.Review Due
14	4/24	Students Topic Presentation	
		Students Topic Presentation	
15	5/1	Students Topic Presentation	
		Students Topic Presentation	
16	5/8	Students Topic Presentation	
		Students Topic Presentation	
17	5/13- 17	FINAL EXAM	

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

Conduct of Examinations:

- All examinations are “closed book”. You are only to bring a pencil to the examination room.
- All exams are computer-based exams. Please bring your computer updated and with Lock Down Browser installed.
- Seating, when assigned must be followed.
- All examinations and test-related materials are copy-righted and remain the property of the UTEP/Course Director and must be returned to the proctors at the conclusion of the examination.
- **Lateness to examinations: A student arriving 5 minutes late to an examination will not be permitted to sit for the examination. Lateness for more than 5 minutes will result in a grade of 0 (Zero).**
- Students are not allowed any electronic devices such as mobile phones, Blackberries, iPhones etc. during an examination.

Class Policies

Attendance Policy: It is university policy that all students attend ALL scheduled classes and the final class session. Attendance will be taken at each class. Students are advised that pets, family, work and early vacation plans are not excuses for continual lateness, absences or missed exams and assignments. When a student registers for a course, it is assumed that she/he has made arrangements to avoid such conflicts.

Policy on Electronic Devices In Class. Use of personal laptops, cell phones, and other wireless devices (PDAs, MP3 players, SmartPhones etc.) is not permitted during this course. The necessity of classroom discussion and other interaction in this course negates the usefulness of laptops as a note-taking device. The use of personal laptops and other electronic devices is also distracting to your classmates and instructor so do not bring these to class or turn them off before coming to class.

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 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 policy of university 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 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

Any errors in the above syllabus are subject to correction and all course requirements are subject to revision. Students will be notified in writing of all changes made to this syllabus.

Assessment of Student-Led Topic Presentation

Date of Presentation: _____

Topic/Title of presentation: _____

Presenters: _____

Please rate the presentation using the following criteria based on a 0-10 point scale
(0=poor/unacceptable; 10= excellent/outstanding)

- 1) Presentation adhered to guidelines provided in class
- 2) Presentation style was clear/understandable and demonstrated originality/creativity
- 3) Presentation was based upon information that was accurate and included different sources
(content)
- 4) Presenters facilitated class participation and/or discussion
- 5) Presentation included an application and/or tie-in to use with clinically relevant data

Please answer the following two questions in 1-3 sentences:

- 1) *What did you find as the most interesting/useful portion of the presentation?*

- 2) *What do you think could have been done to improve this presentation (content or presentation style related)?*
