COURSE INFORMATION

Term: Summer

Course: PTHP 7101, Research 1 (Evidence-Based Practice)

Contact Hours: 36 (lecture hours)

Credits: 3 credit hours

Course Description: Physical therapy is a dynamic profession, one characterized by ongoing research to enhance clinical practice. As a future professional, you must not only seek information but also critically review findings to appropriately integrate information into your clinical practice. The contents in this course include techniques of literature search, concepts of measurement and how to evaluate the scientific literature. By the end of this course, you will have developed the beginning skills of becoming a critical consumer of the scientific literature. These skills will enable you to systematically review the scientific literature and make informed decisions regarding the application of research findings in physical therapy practice.

Prerequisites: Successful completion/mastery of all related sequential didactic coursework in the Doctor of Physical Therapy curriculum.

Department: Physical Therapy
College: College of Allied Health Sciences

University Mission: Our mission is to provide leadership and excellence in teaching, discovery, clinical care, and service as a student-centered comprehensive research university and academic health center with a wide range of programs from learning assistance through postdoctoral studies.

COURSE OBJECTIVES

Practice expectations are a description of behaviors, skills, or knowledge that defines the expected performance of the physical therapist. When taken in aggregate, they describe the performance of the graduate upon entry into the practice of physical therapy.

By the end of the course, the AU DPT student will:

6.0 Professional Practice Expectation: Communication
6.1 Expressively and receptively communicate in a culturally competent manner with patients/clients, family members, caregivers, practitioners, interdisciplinary team members, consumers, payers, and policy makers
6.1.1 Write up tasked assignments in an appropriate format using given guidelines and proper scientific writing

9.0 Professional Practice Expectation: Evidence-Based Practice
9.1 Consistently use information technology to access sources of information to support clinical decisions
9.1.1 Search PubMed, Ovid and other databases using the PICO model, key words and Boolean search strategies to retrieve articles for review and critique
9.2 Consistently and critically evaluate sources of information related to physical therapy practice, research, and education and apply knowledge from these sources in a scientific manner and to appropriate populations
9.2.1 Identify important concepts in sampling and measurement
9.2.2 Understand the statistical procedures used in research and interpret the results
9.2.3 Understand the various statistical procedures used in causal comparative, correlational and experimental methods
9.2.4 Design a research experiment to answer a research question
9.2.5 Write specific statistically testable research and null hypotheses
9.2.6 Select appropriate statistical tests to analyze the data
9.3 Contribute to the evidence for practice by written systematic reviews of evidence or written descriptions of practice
9.3.1 Use library resources for a literature review in an effective manner
9.3.2 Given an article, describe the research design used
9.3.3 Examine the research design and methodology of a study for flaws and assumptions that reduce the validity of the study
9.3.4 Interpret the results in relation to the specific research hypotheses and methodology
9.3.5 Evaluate conclusions as they relate to clinical PT
9.3.6 Relate results of reviewed research articles to the current practice of PT

GRADING

Course grades will be assigned according to department policy:

A = 91-100%
B = 81-90%
Fail = < 81% and unable to continue in the curriculum

GRADED ACTIVITIES

<table>
<thead>
<tr>
<th>Pass/Fail Activities</th>
<th>Due Date</th>
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<tbody>
<tr>
<td>Written exam (80%)</td>
<td>July 16th</td>
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<tr>
<td>Weekly assignments (20%)</td>
<td>See schedule</td>
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Students must obtain at least a B grade to pass the course.

REQUIRED TEXTBOOKS AND SUPPLIES

REQUIRED TEXTBOOKS

SUPPLIES

- Computer with EndNote installed (instructions will be provided)

SCHEDULE

Note: Assigned chapters refer to the Portney & Watkins textbook unless otherwise stated.

Week 1. May 14th. DPT orientation. No class.
Week 2. May 21th

Introduction
● Introduction to research curriculum, evidence-based research
● Chapter 1 Concepts of research
● Chapter 7 Asking the research question
● Chapter 34 Evaluating research reports
  Article: Chong et al 2001 Does balance control deficit …

Fetters & Tilson textbook
● Chapter 1 Evidence Based Practice Model

General concepts
● Chapter 4 Principles of measurement
● Chapter 5 Reliability of measurements
● Chapter 26 Statistical measures of reliability
  Article: Ryan et al. 2006. Validity & reliability of a novel activity monitor…
● Chapter 6 Validity of measurement

Descriptive research
● Chapter 8 Sampling
● Chapter 17 Descriptive statistics and measures of variability
● Chapter 13 & 14 Exploratory and descriptive research
● Chapter 23 Correlation
  Article: Keele et al 1987 Force control and its relation to timing (read up to page 101 of the article)
● Chapter 15 Surveys and questionnaires
● Chapter 27 Statistical measures of validity
  Article: Chong et al 2010 Rapid assessment of postural instability


Week 4. June 4th

Experimental research
● Chapter 9 Validity in experimental design
● Chapter 10 Experimental designs
● Chapter 18 Statistical inference

● Chapter 14, pp 314-18 Case reports
  Article: Cacciatore 2005 Improvement in automatic postural coordination
● Chapter 12 Single-subject designs
  Articles: (1) Hall et al 2004 The effect of cane use …
  (2) Chong et al 2009 An instance of reduced center of mass …
● Chapter 19 T-test
● Chapter 20 Analysis of variance
  Article: Regnaux et al 2006 Human treadmill walking …

Week 5. June 11th
● Attend class of 2019 platform presentation. Details will be explained in class
● Chapter 21 Multiple comparison (post-hoc) tests
● Chapter 22 Nonparametric tests for group comparison
● Chapter 25 Analysis of frequencies: Chi-square
● Chapter 24 Regression
  Article: Lee 2017. Hysteresis in center of mass velocity…
● Chapter 29 Multivariate analysis
  Articles: 1) Jacobs et al Multiple balance tests …
  2) Chong 2008 Factor analysis of the …
  3) Chong 2006 Comparison of muscle functions …

Week 6. June 18th
● Chapter 28 Epidemiology
  Article: Parachute spoof article
● Chapter 16 Systematic reviews and meta analysis
   Articles: (1) Ivry 2003 Clumsiness … (review article)
   (2) Woollacott & Shumway-Cook 2002 Attention and control of posture …(review article)
   (3) Eng & Tang 2007 Gait training strategies …(review article)

June 19th
● Introduction to EndNotes bibliography software – in PPE 1 class @ 1p

Week 7. June 25th
● Chapter 31: Strategies for searching the literature
● Scientific writing
● Avoiding plagiarism

  Fetters & Tilson textbook
   ● Chapter 2 Asking a Clinical Question and Searching for Research Question

June 27th Wednesday noon-2p
● Attend class of 2019 poster presentation. Details will be explained in class.

Week 8. July 2nd
● Bibliography formatting with EndNotes

Week 9. July 9th
● Review and practice exam

Week 10. July 16th
● Written exam

Week 11. July 23th
● No class. Class time will be used as remediation for those who did not pass the exam.

COURSE POLICIES

CLASS PREPARATION
In order to be able to fully participate in the course activities, you are expected to follow the instructions for the activities and complete activities as specified by the stated deadlines.

ATTENDANCE
You are expected to attend and actively participate in all activities. If you cannot attend a class session, it is your responsibility to:
   • Prior to that class session, let the course director know that you will be absent
   • After the class session, get any needed class notes or materials from peers.

You are responsible for reading, understanding, and following the attendance policies contained in the Student Handbook.

ELECTRONIC DEVICE POLICY
1. The use of personal computers is allowed during class and/or lab sessions to support the learning experience (i.e., taking notes).
2. Except during class breaks, the use of personal computers for non-course-related activities (i.e, Facebook, other social media, YouTube, online shopping, etc.) is distracting to both faculty and peers. Therefore, it is considered unprofessional and will result in dismissal from class. Repeat offenders may be expelled from the course.
3. Cellular phones should remain in the silent mode during all class sessions. Inform the professor if you need to leave it On.

COMMUNICATION POLICY
According to departmental policy, email communication needs to take place via your @augusta.edu accounts. Emails will be answered Monday – Friday from 8:00 AM to 5:00 PM, except at the discretion of the professor.

COURSE AND FACULTY EVALUATIONS
These evaluations are important to faculty (for promotion and tenure purposes) but are especially important to students; your feedback helps faculty improve the organization and delivery of course content. For these reasons, timely submission of course evaluations is expected.

**ADA ACCOMMODATION**  
The Augusta University Accommodating Students with Disabilities Policy available at [http://www.augusta.edu/tds/documents/testing_docs/facultyguide1.pdf](http://www.augusta.edu/tds/documents/testing_docs/facultyguide1.pdf) ensures that all students with disabilities are afforded equal opportunity and access to all programs and facilities at Augusta University.

Augusta University is committed to making online courses accessible to and usable by persons with disabilities in order for students to obtain maximum benefit from their educational experience.

To request academic accommodation services, please contact the Testing and Disability Services office at tds@augusta.edu and/or (706) 737-1469 as soon as possible, to begin the process. Please note that all discussions with Testing and Disability Services are subsequently with your course instructor are confidential and are meant to insure that your accommodations are appropriately implemented throughout the course.

**ACADEMIC HONESTY POLICY**  
Students at Augusta University are expected to conduct themselves with honesty and integrity.

The Augusta University Academic Conduct Policy (available at [http://policy.gru.edu/3-1-4-academic-conduct-policy/](http://policy.gru.edu/3-1-4-academic-conduct-policy/)) states that:

"The University recognizes that honesty and integrity are necessary to its academic function. The following regulations protect the equity and validity of the university’s grades and degrees, and help students develop ethical standards and attitudes appropriate to academic and professional life.

Violations of academic honesty include cheating of all kinds, plagiarism, fraudulent research activity and/or scholarship, collusion, and false statements made to avoid negative academic consequences. […]"

To learn how to avoid plagiarism, please refer to the following guide created by the Augusta University Libraries and Writing Center at [http://guides.augusta.edu/friendly.php?s=plagiarism](http://guides.augusta.edu/friendly.php?s=plagiarism)