



**Department of
Kinesiology
ATR 410: Therapeutic
Exercise**

Fall 2018

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Final Exam: Friday, December 14th 10:30-1:00	Office hrs: By appointment

COURSE DESCRIPTION and AIM

This course will provide students with an in-depth exposure to the knowledge and skills that an athletic therapist needs for the appropriate and effective use of exercise to promote healing, return patients to optimal function and enable high performance in athletic participation. *We will explore the theory and practice of active therapeutic techniques to restore human function.* We will use an approach that emphasizes applied biomechanics and functional rehabilitation, exploring various manual therapies, PNF integrations and specific rehabilitation protocols to rehabilitate some of the most common orthopedic pathologies.



STUDENT LEARNING OUTCOMES

Upon completing this course, you should be able to:

- Articulate & teach the physiological response of the body to trauma and inactivity/immobilization.
- Demonstrate a wide variety of manual and functional therapeutic techniques.
- Perform objective measures to determine the level of function of a patient, the prognosis for recovery and the appropriateness of the therapeutic intervention.
- Outline the indications and contraindications of exercise after injury.
- Create activity-specific functional progressions with appropriate goals in a therapeutic exercise program.
 - Describe common surgical techniques and implement a postoperative rehabilitation or reconditioning exercise program.
- Perform movement screening and corrective exercise assessments to restore functional movement patterns for safe return to physical activity.
- Appreciate the importance of functional outcome measures to determine patient health-related quality of life.

REQUIRED TEXTS AND RECOMMENDED RESOURCES

Required (you may buy 5th or 6th ed)

Prentice, WE. Prentice, WE. Rehabilitation Techniques for Sports Medicine & Athletic Training, 5th ed., McGraw-Hill; 2009., 5th ed., McGraw-Hill; 2009. [eTextbook Option: \(\\$55, 14 day money-back guarantee\)](#);

Recommended: Arnheim DD, Prentice WE. Principles of Athletic Training. 13th ed. Boston: McGraw – Hill; 2008.

- Supplemental Course Reader; Library Resource: Kinesiology Subject Guide: [Kinesiology Page](#)

ACADEMIC ACCOMMODATIONS

While all students are expected to meet the minimum academic standards for completion of this course, students with disabilities may require academic accommodations. To request academic accommodations, you'll need to file documentation with the [Disability Resource Center](#) (DRC), located in the Bond Academic Center. Once documentation is filed, the DRC will contact your instructors and provide written recommendations for reasonable and appropriate accommodation to meet your needs. If you have questions or would like to discuss those or any learning problems, please feel free to contact me. See [Academic Policies](#) for full text.

FERPA POLICY

As a student at Point Loma, you have a legal right to privacy as outlined in the federal FERPA (Family Educational Rights and Privacy Act) legislation. If I post grades or return assignments, I'll do so in a way that does not publically reveal your name, PLNU student ID, or social security number without your written permission. See [Policy Statements](#) for full text.

FINAL EXAMINATION POLICY

Successful completion of this class requires taking the final examination **on its scheduled day**. The final examination schedule is posted on the [Class Schedules](#) site. No requests for early examinations will be approved.

USE OF TECHNOLOGY

Point Loma Nazarene University encourages the use of technology for learning, communication, and collaboration. In this course, we will rely on Canvas for accessing course materials, submitting assignments, and collaborating in discussion boards and blogs. We will also use cell phone polling when it enhances our in-class activities. You'll want to make sure you are comfortable with these tools, so take advantage of our computer LabTechs to answer questions and help you with any technology issues. You may also call the Help Desk at x2222.

You are welcome to bring your laptop, iPad, and/or cell phone to class—but please make sure you use them appropriately and responsibly. ***If a tech tool becomes a distraction or disruption while class is in session, I will ask you to put it away or invite you to no longer bring it to class.***

ACADEMIC DISHONESTY

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. As stated in the university catalog, “Academic dishonesty is the act of presenting information, ideas, and/or concepts as one’s own when in reality they are the results of another person’s creativity and effort. Such acts include plagiarism, copying of class assignments, and copying or other fraudulent behavior on examinations. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for a) that particular assignment or examination, and/or b) the course.” See [Academic Policies](#) for full text.

COURSE REQUIREMENTS

A. Quizzes

We will have various forms of quizzes during the semester (online, partner, mid-class session).

B. Examinations

Unit examinations will be used to measure your mastery of key aspects of the course of study. Exams will be used both in class and online through eclass. Students traveling for team assignments must complete exams before travel.

C. Clinical Rounds Video Assignment:

**This assignment is designed to challenge you to think critically to address an unresolved clinical case. With 1-2 partners, choose a current problematic case from the A.T. clinic or another facility if you are interning somewhere else. The instructor can also provide case studies as needed.*

This assignment will require you to mimic a clinical rounds process—in which health care providers discuss solutions to a problematic case—you will interact with your partner to evaluate the case and develop a plan to progress the patient toward improved function. ****Each AT student should choose an AHS student for this assignment, no exceptions to this requirement. Obtain all chart notes and physician correspondence in a confidential manner according to current HIPPA laws. (At minimum, all identifying information must be blacked out).** Please include enough patient information in your finished product for your professor to understand the nature of the case.

You will present these cases to the class by creating a **Clinical Rounds Video** in which you accomplish the following in no more than 10 minutes:

1. Briefly present the case Hx & Px and identify the original goals for the treatment of this injury.
2. Identify why this case is problematic. What factors are contributing to the lack of success with the current course of treatment? Please communicate with clinicians involved if possible.
 - Address all aspects of the rehabilitation program that you determine to be problematic: *patient compliance, ROM, strength, muscular endurance, cardiorespiratory endurance, speed, power, agility, balance, neuromuscular control, coordination, specificity, proprioception.*
3. Outline how you would change the treatment paradigm. Implement and demonstrate a Corrective Exercise intervention as appropriate, indicating specific alterations you would make to the

therapeutic program that would encourage healing in this patient. Explain *how* these alterations will facilitate return-to-play.

NOTE: this content is not required for ATR 410 but will be incorporated for AT students in ATR 390

Patient Rated Outcomes Assessment:

Patient Rated Outcome scales (PROs) are assessment tools used to measure how a particular clinical treatment has affected a patient's Health Related Quality of Life (HRQL). Many scales currently exist that measure the effects of treatment on patients (FAAM, DASH, LEFS, SF-36, OWI etc); some scales are global in nature and measure overall patient status, while others are used to measure specific joint function after a medical intervention.

Address the following factors for the Patient Rated Outcome scale you choose:

- Why did you choose this scale?
- How often should this PRO scale be used?
- How user friendly is the scale you chose?
- How will you know if the patient's status improved? (Identify the minimal clinically important difference)

*Helpful resource: <http://members.nata.org/education/f/ATEC/Beyond-the-Basics-of-Clinical-Outcomes-Assessment-Selecting-Appropriate-Patient-Rated-Outcome-Measures-for-Patient-Care.pdf>

D. Lab Demonstration of Therapeutic Exercise

Students will be evaluated for competence in the following exercises:

- a. isometric, isotonic and isokinetic exercise
- b. eccentric versus concentric versus econcentric exercise
- c. open versus closed kinematic chain exercise
- d. elastic, mechanical and manual resistance exercises
- e. joint mobilization
- f. plyometrics-dynamic reactive exercise
 - g. proprioceptive neuromuscular facilitation (PNF) for muscular strength/endurance, muscle stretching, and improved range of motion
- h. exercises to improve neuromuscular coordination and proprioception
 - i. passive, active and active-assisted exercise
 - j. cardiovascular exercise, including the use of stationary bicycles, upper body ergometer, treadmill and stair climber
 - k. functional rehabilitation and reconditioning, functional progressions
- m. sport specific activity

E. Functional Progression (FP) OR Corrective Exercise Intervention (CE)

For this assignment, you can choose to design either a functional progression or a Corrective Exercise Intervention.

The Functional Progression can be based on an upper or lower-extremity injury. Exercises should include only those that are *functionally-specific to the athlete's sport or activity*. A variety of exercises should be utilized, with an increase in complexity and a logical, triplanar approach.

If you choose to accomplish the Corrective Exercise Intervention, you should develop a sequence of steps to address a specific movement system impairment or postural distortion syndrome using the NASM's Corrective Exercise Continuum (I will give you access to CES material PRN).

****Please create your exercises using either video, PPT, or using the PDF format on the [Athletic Training Clinic's website](#)
[Here is a good template:](#)**

For the FP, you must view the *Functional Video Digest Series* (Gary Gray, PT) most appropriate for your chosen joint. This is for your benefit and will enhance your treatment approach. You should be prepared to share your progression with colleagues. *See Appendix 1 for list of videos.*

Viewing Videos: Go to media services, and give them the Call #: "DVD (space) 0285" (literally, the media services tech needs to enter in DVD, then space, then 0285 and then the videos will come up, then you can specify which video title you want from the list in Appendix 1 of this syllabus) ***The technician can also search by title: "Functional Video Digest Series".***

*You can only watch video in media services and can't check videos out, so plan for 60-90 minutes, and take notes.

To gain practical experience with Rehab Classes & Circuit Training, the AT Clinic has multiple opportunities for you to become involved:

MW 7:30-8:30 Full body circuit

T, R 8:30 – 9:20am

G. Discussion Board Participation

I have supplemented the course text and lecture materials with current evidence-based medical literature. These readings will be provided via electronic access to journal articles and systematic reviews. It is expected that course material will be read **before** the scheduled lecture so that informed and lively discussion may be the primary focus of class meetings. The aim of supplemental reading is to increase awareness of the variety of thought and approaches concerning therapeutic exercise, and to keep you current with contemporary practice.

After certain readings, and prior to the in-class discussion, you will respond to questions on the Discussion Board on eclass. At other times, I will also ask you to summarize the key points of outside readings by outlining the major points of the article prior to class. You should be ready to discuss these outlines with your colleagues in class, and refine the ideas together through JigSaw activities.

H. Final Exam

Exam: A cumulative review of course Competencies will be evaluated in exam format.

I. Group Rehabilitation Project

You will collaborate with a colleague(s) to produce a comprehensive rehabilitation intervention for a post-surgical case. Your group will present the program in Powerpoint/Prezi format similar to a professional conference symposium. I will invite the Kinesiology department students and faculty to our symposium. *Please note that your work as members of the group will be disseminated to other students and faculty; although your grade and any other sensitive material will not be shared.*

Topics for Group Project (postoperative rehab programs):

- Bankart Repair
- ACL with/without meniscal repair
- Lumbar spine disc herniation w/without spondylopathy

- UCL repair: “Tommy John” reconstruction
- Modified Brostrom repair for Chronic Ankle Instability
- Dynamic warmup and flexibility program for a team or group (injury prevention approach)
 - I.e. ACL prevention program, or ankle/knee injury prevention in BKB
 - TRX strength and flexibility program
- High Intensity Interval Training Program (HIIT: Interval Circuit training) for performance enhancement or prevention of disease
- Corrective exercise intervention

ASSESSMENT AND GRADING

A.	Quizzes not to exceed <u>5@10</u> pts each	50
B.	Examinations <u>3@100</u> pts each	300
C.	Demonstration of Therapeutic Exercise in lab <u>5@20</u> pts each	100
D.	Clinical Rounds Video	30
E.	Functional Progression/Rehab Class (30/20)	30/20
F.	Participation in Discussion Board	40
G.	Final exam/Group Rehab. Project	<u>200</u>
	TOTAL	750

All assignments are due at the beginning of the class period in which they were assigned. Classes missed due to athletic events, planned family functions or athletic training assignments must be planned and arranged with the professor before class.

NOTE: It is your responsibility to maintain your class schedule. Should the need arise to drop this course (personal emergencies, poor performance, etc.), you have responsibility to follow through (provided the drop date meets the stated calendar deadline established by the university), not the instructor.

Appendix 1: Media Services Holdings for Therapeutic Exercise and Rehabilitation

Viewing Videos: Go to media services, and give them the Call #: “DVD (space) 0285” (literally, the media services tech needs to enter in DVD, then space, then 0285 and then the videos will come up, then you can specify which video title you want from the list below) If that doesn’t work, the tech can search by title: “Functional Video Digest Series”.

*You must watch video in media services (students can’t check videos out, so plan for 60-90 minutes, and take notes). Faculty can check out for 48 hours.

VIDEOS

Functional Video Digest Series: Gary Gray, PT

- 1.1 Knee
- 1.2 Trunk
- 1.3 Mostability shoulder
- 1.4 Foot
- 1.5 Hip
- 1.6 Balance
- 1.7 Lumbar Spine
- 1.8 Thoracic Spine
- 1.9 Cervical Spine
- 1.10 Walking
- 1.11 Throwing

1.12 Lifting

Proprioceptors

Econcentrics

The Matrix System

Transformation

ACL Prevention

Patella Femoral

Running

SI Joint

Ankle Sprains

Functional Manual Reaction:

The Hips

The Foot and Ankle

The Knee

Thoracic Spine

The Shoulder

The Lumbar Spine