

HSES 656

Rehabilitation Techniques of Athletic Training

University of Kansas Athletic Training Course Syllabus Fall 2008

Tues. & Thurs. 9:30-10:50
Robinson 145 & 201

Instructor: Phillip Vardiman, PhD, ATC

Office: 161D Robinson

Telephone: 864-0709

Email: pvardim@ku.edu

Office Hours: posted or by appointment

Academic Credit: 3

Prerequisite: Management and Treatment Techniques of Athletic Training HSES 654.

Textbooks: (Required) Handbook of Orthopaedic Rehabilitation, 2nd edition. Brozman and Wilk, 2007.

(Required) Kinesiology Flashcards, 2nd Edition. Lynn S. Lippert and Mary Alice Duesterhaus Minor

(Recommended) Therapeutic Exercise for Musculoskeletal Injuries, 2nd edition. Houglam, 2005.

(Recommended) Clinical Orthopaedic Rehabilitation, 2nd edition. Brozman and Wilk, 2003.

Course Description: This course discusses the planning involved and the implementation of a comprehensive rehabilitation program for injuries/ illness sustained by the competitive athlete.

Course Goals: A study of current theory and application in the use of therapeutic exercise and rehabilitation in the sports medicine/athletic training setting. Emphasis will be placed on progression, prescription, and application of therapeutic rehabilitation exercises and reconditioning programs of surgical and non-surgical athletic injuries. This is an advanced course designed to investigate the scientific and philosophical bases of therapeutic exercise with specific reference to the rehabilitation process. This course is intended to provide the student with the expanded theoretical background required for prudent clinical application of the most current therapeutic exercise programs and reconditioning procedures. Indications and contraindications for each specific exercise

progression procedure will be emphasized. Students will be provided the opportunity to conduct experiments with various rehabilitation and reconditioning exercises currently employed with the state of the art rehabilitative/reconditioning equipment.

Evaluation: Course grades will consist of scores from the following:

Exams (2)	200 points total
Final Exam	150 points
OAIP Flashcards	40 points
Scenario Flashcards	160 points
Rehab Participation	80 points
<i>Mini Case Studies</i>	Pass/ Fail
<i>Scenario Reflection Write Ups</i>	Pass/ Fail
<i>Surgery Observation</i>	Pass/ Fail
<i>Physical Therapy Field Experience</i>	Pass/Fail
<i>Team Debates</i>	<i>Pass/Fail</i>
Total points	550 points

- **Examinations:** Exams will consist of true/false, multiple choice, fill in the blank, and short answer questions. Exams are worth approximately 100 points each. All absences from examinations must be approved PRIOR TO EXAM DATE. Make up exams will only be given with prior approval. All exams not approved will not be retaken.
- **Final Exam:** The final exam will be an accumulative compilation of all materials provided in this class. It will be formatted identically as the previous two exams, but will be worth 150 points.
- **OAIP Quizzes:** There will be 4 quizzes that are unannounced in class covering Origin, Insertion, Action and Palpation of the primary movers of the body region that we are covering.
- **Scenario Flashcards:** You will be required to write 16 scenarios on separate 3 x 5 cards. You will have your ACI pick a card each week so that you can review the injury scenario together and discuss Rehabilitation treatment options that would occur throughout the healing process.
- **Rehabilitation Participation:** You are required to observe at a clinical setting one rehabilitation session per week. This does not count toward your observation hours and can not occur during your scheduled AT clinical rotation. Make a section at the end of your reflection write up that reports what you observed and which ACI supervised the rehabilitation program and have them sign it.

- **Mini Case Studies:** Five case studies will be written for injuries encountered during the semester. Each injury should be documented in a SOAP note format and should be turned in with a rehabilitation protocol. 1. Shoulder, 2. Elbow or Wrist or Hand, 3. Hip or Thigh, 4. Knee, 5. Ankle or Lower Leg. The rehabilitation plan does not need to present the course of action that was actually taken, but could outline a proposed plan. Each case study should encompass each phase of the rehabilitation process. The rehabilitation plan should include exercises for range of motion, muscle strength, muscle power, muscle endurance, balance/ proprioception, cardiovascular endurance and maintenance, and functional exercises. Diagrams of the exercises are to be included. Criteria for advancement or return to activity should be included as well as proper progression throughout the rehabilitation protocol. Specific patient guidelines should be outlined (i.e. limit active flexion to 90 degrees, or limit weight bearing activities until full ROM, etc).
- **Scenario Reflection Write ups:** You will be required to write a reaction/ reflection paper about the scenario that you and your ACI discussed. You are required to evaluate specific parameters of the modalities that were chosen and discussed and then decide from your research if the modalities were appropriate. If additional modalities would have been more appropriate please list these in your reflection. Grading Scale: Course grades are determined by the percentage calculated from the total points earned by the student and the total points for the course. The following 10 point grading scale will be used.
- **Physical Therapy Field Experience:** Beginning in late October, through November, each student will be assigned to a physical therapy site. Each student will be scheduled for 4 hours of observation at various rehabilitation clinics around town.
- **Surgery Observation:** Each student will be required to observe one surgery during this semester. You will need to respond and reflect on this observation and experience in the online journal on Blackboard. You will need to include information general to age of patient, gender, body part and injury, surgical correction procedure and surgeons name as well as your reaction to the process and dialogue that occurred during the procedure. This log should be sent by December 7th.
- **Team Debates:** Teams will be made and will prepare a 5-10 minute presentation on an assigned topic. Each team will have a pro- topic and will be required to evaluate the opposing teams topic for cons.

Late Assignments and Participation: Assignments are to be turned in by the posted due date. Assignments that are turned in late will be deducted five points a day until the assignment is turned in. Tests that are missed due to an unexcused absence will not be retaken. In addition, laboratory sessions will be

scheduled throughout the semester. Since this is a rehabilitation course, it is expected that each student willingly participate in laboratory exercises as your participation in the lab directly affects the level at which your classmates learn the skills as well.

Grading Scale: Course grades will be based on the following scale:

93-100	A	73-76	C
90-92	A-	70-72	C-
87-89	B+	67-69	D+
83-86	B	63-66	D
80-82	B-	60-62	D-
77-79	C+	59 or less	F

Course Policies: A 2.5 core grade point average must be maintained for all Athletic Training specific classes with a cumulative grade point average no lower than a 2.5 in the curriculum as a whole. This is in compliance with the School of Education and requirements for graduation.

Course Attire: Since this is a therapeutic exercise course, it is necessary that students dress in a manner so they may participate in physical activities. This means workout attire with lace up/ closed toe shoes must be worn when participating in some rehabilitation exercises. With this in mind, please refrain from wearing flip-flops, healed dress shoes or clothing that may impair your ability to participate in course activities. Be prepared and have a change of clothes on hand to change into if necessary.

Accommodations for Students with Disabilities: Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact me personally as soon as possible so we can discuss accommodations necessary to ensure full participation and to facilitate the educational opportunity.

Academic Misconduct: The scope and content of the material included in this course are defined by the instructor in consultation with the responsible academic unit. While the orderly exchange of ideas, including questions and discussions prompted by lectures, discussion sessions and laboratories, is viewed as a normal part of the educational environment, the instructor has the right to limit the scope and duration of these interactions. Students who engage in disruptive behavior, including persistent refusal to observe boundaries defined by the instructor regarding inappropriate talking, discussions, and questions in the classroom or laboratory may be subject to discipline for non-academic misconduct for disruption of teaching or academic misconduct, as defined in the Code of Student Rights and Responsibilities (CSRR), Article 22, Section C, and the University Senate Rules and Regulations, Section 2.4.6. Article 22 of CSRR also defines potential sanctions for these types of infractions.

Academic misconduct by a student shall include, but not be limited to, disruption of classes; threatening an instructor or fellow student in an academic setting, giving or receiving of unauthorized aid on examinations or in the preparation of notebooks, themes, reports or other assignments; knowingly misrepresenting the source of any academic work; unauthorized change of grades; unauthorized use of University approvals or forging of signatures; falsification of research results, plagiarizing of another's work; violation of regulations or ethical codes for the treatment of human and animal subjects; or otherwise acting dishonestly in research.

Please refer to the timetable of classes for additional information. If academic misconduct takes place, a grade of "0" will be given for that assignment. Additional sanctions may be imposed per the instructor's discretion.

Cell Phone Policy: No cell phones are allowed to be on in my class. If your cell phone rings during class, you will be asked to leave and 10 points will be deducted from your grade. Every third person who's cell phone rings in class has to buy their classmates pizza before the semester is over.

Inclement Weather Policy: Follow the University of Kansas's policy for inclement weather. If the University is closed we will not have class.

Course Objectives:

A. To be able to describe the body's anatomical and physiological and psychological adaptation to cardiovascular and muscular conditioning programs. Describes and predicts the integration and coordination of cell function in response to injury and its implications on the development and progression of a rehabilitation program. Describes, defines and appreciates the healing process of bone and the inflammatory response to acute and chronic injury and illness and defines tissue lesions by body system in terms of etiology pathogenesis, pathomechanics, treatment options, and expected outcomes. Identifies the implications of underlying pathologies and uses this knowledge to select the appropriate therapeutic modality and exercise protocols.

B. Define, describe and interpret the use of standard tests, test equipment, functional testing procedures, and testing protocols for the measurement of cardiovascular respiratory fitness, body composition, posture, flexibility, muscle strength, power and endurance as they relate to therapeutic exercise. Use the objective measures to develop individual rehabilitation and reconditioning programs. Compares and contrasts various types of flexibility, strength training and cardiovascular conditioning programs considering the effects the athletes would expect if followed. Lists the safety precautions for these programs.

C. Implements, administers, recommends, describes and provides supervision and instruction on development of fitness programs, the use of commercial weight training equipment. The student will be able to correct or

modify of inappropriate unsafe or dangerous fitness routines. Will describe common surgical techniques, pathology and anatomical alterations that may effect implementation of rehabilitation and reconditioning programs. Understands concepts and principles pertaining to strength, flexibility and endurance programs or routines, home, school workplace ergonomics and helps construct and educate patient/ athletes home exercise programs and self treatment plans. The student will be able to define, describe and interpret components of functional progressions of a therapeutic exercise program form the result of an injury assessment. Describes the mechanical forces applied to design and use of rehabilitation or reconditioning exercise equipment and will be able to inspect therapeutic exercise equipment to ensure safe operating conditions.

D. Recommends and describes the appropriate selection, application, and evaluation of a therapeutic exercise plan by determination of goals and objectives based upon initial assessment, reassessment and goal setting. The student will be able to demonstrate proper techniques and will take in consideration all indications, contraindications, theory, principles and incorporation and application of various therapeutic exercises including: A. isometric, isotonic, isokinetic; B. concentric vs. eccentric; C. open vs. closed kinetic chain; D. Elastic, mechanical and manual resistance exercise, joint mobilizations, plyometrics- dynamic reactive exercise, PNF for muscle endurance, strength and stretching. The student will also describe the physiological responses of the human body to trauma and will be able to revise goals and objectives, progressions of activity, return to play based on functional outcomes and proper assessment and interpretation of rehabilitation and reconditioning programs. The student will be able to perform a functional assessment for safe return to play. The student will be able to interpret physician notes, post operative notes, medical prescription for rehabilitation programs and will be able to describe and record rehabilitation, functional rehabilitation and reconditioning with follow up notes, SOAP notes, progress notes etc.

E. The student will accept the professional ethical and legal parameters that define the proper role of the certified athletic trainer in the treatment and rehabilitation and reconditioning of athletes and others involved in physical activity. Accepts the moral and ethical obligations to provide rehabilitation and reconditioning and social support to athletes and active persons. The student will respect and appreciate the proper role of attending physicians and paramedical personnel in the treatment and rehabilitation and reconditioning of athletes. The student will also respect protocols regarding confidentiality of medical information, therapeutic prescription and health care referral.

F. The student will be able to formulate a plan for appropriate psychological intervention and referral will all parties involved. The student will be able to describe and use motivational techniques that certified athletic trainers must use during rehabilitation and reconditioning. The student will be able to develop and

implement stress reduction techniques and mental imagery techniques for athletes and others involved in physical activity. The student will be able to identify the stress response model and how it parallels injury.

The primary mission of the School of Education is to prepare leaders in education and human services fields. As stated in the School Code

Within the University, the School of Education serves Kansas, the nation, and the world by (1) preparing individuals to be leaders and practitioners in education and related human service fields, (2) expanding and deepening understanding of education as a fundamental human endeavor, and (3) helping society define and respond to its educational responsibilities and challenges.

The components that frame this mission for our initial and advanced programs are Research and Best Practice, Content Knowledge, and Professionalism. These interlocking themes build our Conceptual Framework.

**HSES 656- Rehabilitation
Course Schedule
(This is a tentative schedule of topics for this course)**

Date	Topic
8/21	Syllabus Muscle Strength- Isometrics, Isotonic, Isokinetic Exercise CKC and OKC
8/26	Inflammation, Phase of healing and rehabilitation Scenario #1 Due
8/28	Inflammation, Phases of healing and rehabilitation Components of a rehabilitation program Scenario #1 Rewrite Due Scenario #2 Due
9/2	Therapeutic Rehabilitation Definitions Range of Motion, Balance and PNF Reflection #1 Due. Scenario #2 Rewrite Due Team Debate #1- Quantitative Data vs. Qualitative Data Measuring Outcomes
9/4	Psychological Considerations for Rehabilitation- MEGAN BRENT
9/9	Therapeutic Rehabilitation Definitions Joint Mobilizations Scenarios #3-16 Due Reflection #2 Due
9/11	Therapeutic Rehabilitation Definitions Manual, Mechanical and Positional Traction
9/16	Therapeutic Rehabilitation Definitions Cardiovascular and functional conditioning Reflection #3 Due Team Debate #2- Cross Training vs. Sport Specific
9/18	Therapeutic Rehabilitation Definitions Plyometrics
9/23	Foot, Ankle Lower Leg Rehabilitation Reflection #4 Due
9/25	Foot, Ankle Lower Leg Rehabilitation
9/30	Foot, Ankle Lower Leg Rehabilitation Reflection #5 Due OIAP Quiz #1
10/2	Examination 1
10/7	Knee, Hip and Thigh Rehabilitation
10/9	Knee, Hip and Thigh Rehabilitation Reflection #6 Due
10/14	Knee, Hip and Thigh Rehabilitation OIAP Quiz #2 Reflection #7 Due
10/16	Fall Break – No Class
10/21	Shoulder, Elbow, Wrist and Hand Rehabilitation Reflection #8 Due LOT Proficiencies
10/23	Shoulder, Elbow, Wrist and Hand Rehabilitation LOT Proficiencies

10/28	Shoulder, Elbow, Wrist and Hand Rehabilitation- Ken Wainwright Reflection #9 Due OIAP Quiz #3
10/30	Spine and Pelvis Rehabilitation
11/4	Spine and Pelvis Rehabilitation Reflection #10 Due Team Debate #3 Williams Flexion vs McKenzie Exercise Protocols
11/6	Spine and Pelvis Rehabilitation OIAP Quiz #4
11/11	Examination 2 Reflection #11 Due
11/13	Core Stabilization and Functional Exercise
11/18	Aquatic Therapy- Reflection #12 Due
11/20	Aquatic Therapy- Murphy Grant
11/25	Muscle Energy Reflection #13 Due
11/27	Thanksgiving Break – No Class
12/2	Muscle Energy and ART Reflection #14 Due LOT Proficiencies Team Debate #4 Muscle Energy vs. ART
12/4	ART LOT Proficiencies
12/9	Reflection #15 Due LOT Proficiencies
12/11	Review Reflection #16 Due LOT Proficiencies
12/16	Finals, Rehab Binders Due