EXRS 4100 Therapeutics I

Class Schedule:

Class will meet M, W, @ 10:10 – 11:00, Lab – Thursday 8:00 – 9:15

INSTRUCTORS:

Dr. Bud Cooper, ATC, CSCS 542-6463 Office 101J Ramsey Office hours by appointment

Laboratory Teaching Assistants – Emily Miller, ATC 542-6531

REQUIRED TEXT:

Houglum, Peggy A. (2005). Therapeutic Exercise for Athletic Injuries, 2nd Edition Human Kinetics

Starkey, C. (2004). Therapeutic Modalities for Athletic Trainer. 3rd Edition, F.A. Davis.

SUPPLEMENTAL TEXT:

Belanger A.L. (2003). Evidenced Based Guide to Therapeutic Physical Agents. Lippincott, Williams and Wilkins.

Denegar, C.R. (2000). Therapeutic Modalities for Athletic Injuries. Human Kinetics.

Prentice, W. (1990). Therapeutic Modalities in Sports Medicine. Times Mirror/Mosby, 2nd Edition.

Arnhiem, D. and Prentice W. (1993). Principles of Athletic Training. Times Mirror/Mosby, 8th Edition.

COURSE DESCRIPTION:

Principles and goals of common rehabilitation procedures and treatment for athletic injuries will be presented including the use of modalities, manual therapy, and therapeutic exercises in a comprehensive rehabilitation program. Laboratory experiences will emphasize proper use of modalities and rehabilitation techniques of common injuries. Indications and contraindications for the use of therapeutic modalities and therapeutic exercise program will be explored.

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

COURSE OBJECTIVES:

The student will be able to:

Cognitive

1. Analyze the normal physiological responses of the human body to trauma and inactivity of specific body tissues (ligaments/capsules, muscles, tendons, and bones).

2. Describe the integration and coordination of cell function in response to injury (e.g., sources of cell injury, inflammation, healing, and repair).

3. Define the inflammatory response to acute and chronic injury and illness.

4. Identify the implications of various underlying pathologies and use this knowledge to select appropriate therapeutic modalities and therapeutic exercise protocols.

5. Predict the physiological process of wound healing and tissue repair and its implications (limitations, contraindications) on the development and progression of an appropriate rehabilitation or reconditioning program.

6. Describe and interprets appropriate measurement and functional testing procedures as they relate to therapeutic exercise (e.g., use of isokinetic devices, goniometry and dynamometers, postural stability test, hop tests, specific function tests).

7. Use objective measurement results (muscular strength/endurance, range of motion) as a basis for developing individualized rehabilitation or reconditioning programs.

8. Describe common surgical techniques, pathology, and any subsequent anatomical alterations that may affect the implementation of rehabilitation or reconditioning exercise program.

9. Interpret the results of injury assessment and determine an appropriate rehabilitation or reconditioning plan to return the patient to physical activity.

10. Define the basic components of activity-specific functional progressions in a therapeutic exercise program.

11. Describe the mechanical principles applied to the design and use of rehabilitation or reconditioning exercise equipment (leverage, force).

12. Recommend the appropriate therapeutic exercise plan and determines appropriate therapeutic goals and objectives based on the initial assessment, frequent reassessments, and appropriate goal setting.

13. Describe the appropriate selection and application of the exercise taking into consideration:
a. the physiological responses of the human body to trauma
b. the physiological effects of inactivity and immobilization on the
muscuskeletal, cardiovascular, nervous, and respiratory systems of the
human body
c. the associated anatomical and/or biomechanical alterations of commonly used primary and reconstructive surgery
d. the physiological adaptations induced by the various forms of therapeutic exercise, such as fast- versus slow-twitch muscle fibers
e. the physiological responses of additional factors, such as age and disease

14. Describe the indications, contraindications, theory, and principles for the incorporation and application of various contemporary therapeutic exercises, including:
a. isometric, isotonic, & isokinetic exercise
b. eccentric vs concentric exercise
c. open-vs closed-chain exercise
d. elastic, mechanical,& manual resistance exercise
e. joint mobilization exercises
f. plyometrics-dynamic reactive exercise
g. PNF for muscular strength/endurance, stretching, and improved ROM
h. exercises to improve neuromuscular coordination & proprioception
i. passive, active, & active-assisted exercise
j. cardiovascular exercise, including the use of stationary bicycles, upper-body
ergometer, treadmill, and stair climber
k. aquatic therapy
l. functional rehabilitation and reconditioning
sport-specific activity
m. soft tissue mobilization

15. Revise goals and objectives, and develop criteria for progression and return to activity, based on the level of functional outcomes.

16. Describe appropriate methods of assessing rehabilitation and reconditioning progress and interpret the results

17. Describe rehabilitation, functional, and reconditioning progress using follow-up notes, progress notes, SOAP notes, etc.

18. Compare the effectiveness of taping, wrapping, bracing, and other supportive/protective methods for facilitation of safe progression to advanced therapeutic exercises and functional activities.

19. Apply manufacturer’s guidelines for the inspection and maintenance of therapeutic exercise equipment

20. Compares the psychosocial requirements of various sports activities to the readiness of the injured or ill individual to resume physical participation

21. Understands the psychological and emotional responses (motivation, anxiety, apprehension) to trauma and forced physical inactivity as they relate to the rehabilitation and reconditioning process.

22. Describes the motivational techniques that the certified athletic trainer must use during injury rehabilitation and reconditioning.

23. Normal physiological response of the human body to trauma, physiological wound healing and tissue repair, effect of trauma and inactivity on body tissue and resulting implications for the selection of therapeutic modalities.

24. Prevailing pain control theories and associated rationale for the selection and use of therapeutic modalities for the treatment and control of pain.

25. Systemic and physiological effects of therapeutic heat and cold on normal and injured tissue in the body.

26. Principles of electrotherapy and specific physiological effects, indications and contraindications of shortwave and microwave diathermy, ultrasound, radiant energy devices, and other contemporary therapeutic modalities.

27. Principles of hydrotherapy including specific physiological effects, indications and contraindications of: (a) whirlpool (b) contrast bath and, (c) moist heat packs.

28. Principles of cryotherapy including specific physiological effects, indications and contraindications of: (a) ice (b) slush (c) ice massage (d) compression units, and (e) coolant sprays.

Psychomotor

1. Demonstrate appropriate methods of evaluating rehabilitation and reconditioning progress and interpreting results.

2. Measure the physical effects of injury using contemporary methods (isokineticdevices, goniometers, dynamometers, manual muscle testing, calipers, functional testing) and use this data as a basis for developing individualized rehabilitation or reconditioning programs.

3. Record rehabilitation or reconditioning progress (e.g., follow-up notes, progress notes).

4. Demonstrate the appropriate application of contemporary therapeutic exercises including the following:
a. isometric, isotonic, and isokinetic exercise
b. eccentric vs concentric exercise
c. open- vs closed-kinematic chain exercise
d. elastic, mechanical, and manual resistance exercise
e. joint mobilization exercise
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. aquatic therapy
l. functional rehabilitation and reconditioning
m. sport-specific activity
n. soft tissue mobilization

5. Demonstrate the proper techniques for the performance of commonly prescribed rehabilitation and reconditioning exercises.

6. Perform a functional assessment for safe return to physical activity.

7. Inspect therapeutic exercise equipment to ensure safe operating condition.

Affective

1. Accepts the professional, ethical, and legal parameters that define the proper role of the certified athletic trainer in the treatment, rehabilitation, or reconditioning of athletes and others involved in physical activity.

2. Accepts the moral and ethical obligation to provide rehabilitation or reconditioning to athletes and others involved in physical activity to the fullest extent possible

3. Respects the proper role of attending physicians and other medical and paramedical personnel in the treatment and rehabilitation or reconditioning of athletes and others involved in physical activity.

4. Respects accepted medical and paramedical protocols regarding the confidentiality of medical information, medical and therapeutic prescriptions, and health care referral as they relate to the rehabilitation or reconditioning process.

TESTING:

There will be 4 tests worth 100 points each and a cumulative final worth 100 points. The final exam date is yet to be determined

CLASS PRESENTATION:

Each student will be assigned a modality, therapeutic exercise or a specific protocol for the application of the modality. For your presentation, you will provide information for the rationale for the use of this modality or exercise, patient set-up and instructions, modality or exercise protocol, contraindications and treatment effectiveness. The presentation should be 5-10 minutes.

QUIZZES:

You will also have 14 pop quizzes worth 10 points each in which the highest 10 will be counted.

ARTICLE REVIEWS:

Each student will turn in 3 article reviews on 3 different therapeutic exercises or modalities of their choosing. Each review should be 1-2 pages in length with the majority of the discussion supporting or refuting the conclusions the authors found in comparison with their initial question or claims. Article reviews are due Wednesday, March 5th.

GRADING:

TESTS	100 POINTS EACH FOR A TOTAL OF	400 POINTS
FINAL	COMPREHENSIVE	100 POINTS
MODALITY PRESENTATION		40 POINTS
POP QUIZES		100 POINTS
ARTICLE REVIEWS		60 POINTS
TOTAL		**700 POINTS**

FINAL GRADES:

A = 700 - 630
B = 629 - 560
C = 559- 490
D = 558 - 420
F= 419 and below

LAB POLICY:

You must pass each of your competencies in lab to pass the course. The competencies are pass/fail and will be observed at the beginning of the next lab session.

WRITTEN ASSIGNMENTS:

All assignments are due at the beginning of class on the assigned day. Papers turned in late will be deducted 10% for each day late up to a maximum of 2 days. Any assignments turned in after the 2nd late day will not be accepted.

ATTENDANCE POLICY:

We expect each student to be present and on time to class and laboratory sessions. Please notify the instructor at least 24 hrs in advance of a missed class. It is your responsibility to make up all missed work. Unexcused missed tests will not be made up unless permission was obtained by the instructor.

SPECIAL STUDENT NEEDS:

Student having any special needs (handicap problems or any other factor) that may affect their performance in class or require special instructions strategies should make these needs known to the instructor during the first week of the course.

ACADEMIC HONESTY:

The University of Georgia and the Athletic Training Education program seeks to promote and ensure academic honesty and personal integrity among students and members of the University community. Academic honesty means performing all academic work without cheating, lying, tampering, stealing or receiving assistance from any other person or using any source of information that is not common knowledge. You should read and become familiar with **A Culture of Honesty** publication which defines the policies, procedures and sanctions for academic honesty. These procedures will be strictly enforced by your instructor(s).

EXRS 4100 Therapeutics I - Lab

The athlete will receive a pass/fail grade on each skill within the lab

Demonstrate the appropriate application of contemporary therapeutic exercises including the following:

a. isometric, isotonic, and isokinetic exercise
b. eccentric vs concentric exercise
c. open- vs closed-kinematic chain exercise
d. elastic, mechanical, and manual resistance exercise
e. joint mobilization exercise
f. plyometrics-dynamic reactive exercise
g. proprioceptive neuromuscular facilitation (PNF) for muscular strength/endurance, muscle stretching, and improved range of motion
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