

Bossier Parish Community College
Master Syllabus

Course Prefix and Number: PTAP 203

Credit Hours: 3

Course Title: Orthopedic Conditions

Textbook: Kisner & Colby; Therapeutic Exercise, Foundations and Techniques

Course Prerequisites: Selective admission to the Physical Therapist Assistant program.

Course Description:

Pathophysiology, etiology, clinical signs and symptoms, medical management and physical therapy management of selected orthopedic and soft-tissue related injuries or pathologies commonly treated in physical therapy. Laboratory activities using integrated patient case studies.

Learning Outcomes:

At the end of this course the student will:

- A. communicate with patients and with therapists/interdisciplinary team members , both verbally and in written form, using appropriate terminology related to orthopedic conditions, assessments and interventions
- B. identify and describe for selected orthopedic diagnoses/conditions the incidence/etiology, pathophysiology, common signs/symptoms, common medical/PT tests used, typical medical and PT management, and important precautions;
- C. demonstrate entry-level clinical skill with performance of those selected musculoskeletal, cardiovascular and neuromuscular interim assessments, special tests and interventions commonly utilized by and identified as appropriate for a licensed PTA in the orthopedic patient care settings;
- D. appropriately select, justify, sequence, and document interim assessments, interventions and progressions based upon accurate interpretation of physical therapy evaluations/plans of care of orthopedic patients and supported by utilization of evidence-based resources;
- E. apply skills or expand knowledge from this course (or concurrent courses) by participating in one or more community service or professional development opportunities.

To achieve the learning outcomes, the student will:

- 1. describe the signs, symptoms and management of each of the stages of tissue injury/healing. (A)
- 2. list the effects of immobilization on selected musculoskeletal structures. (A,B)
- 3. using the collagen stress-strain curve as a reference, describe the elastic and plastic phases of collagen deformation as it applies to stretching exercises. (A,B)
- 4. discuss the anatomy, typical mechanism of injury, healing response, and general recommended treatment/intervention approaches to facilitate healing of various tissues of the body including ligaments, muscle/tendon, cartilage, and bone. (A,B,E)
- 5. compare and contrast the conditions of osteoarthritis, rheumatoid arthritis, osteoporosis, and osteomalacia in terms of pathophysiology, incidence and implications for PT intervention. (B,E)

6. classify fractures based upon site/extent of injury, direction of abnormality, relationship and complications. (A,B)
7. describe the parameters for exercise dosage (intensity, mode, duration, frequency) and the factors influencing that selection. (B,E)
8. define delayed onset muscle soreness and describe the pathophysiology of the condition. (A,B,E)
9. categorize joint end-feels as normal or abnormal, identifying common causes for abnormal endfeels. (A)
10. compare and contrast passive, active, and active-assistive range of motion including identification of indications and contraindications for each. (D,E)
11. demonstrate on a laboratory competency entry level skill with performing PROM and manual stretching (static, hold-relax and LLLD) and instructing a patient in self stretching of selected joints/muscles using associated equipment as is appropriate. (C)
12. define, compare and contrast static stretching, ballistic stretching, low load – long duration stretching, dynamic stretching and hold-relax (PNF) stretching. (D,E)
13. recognize the indications, goals, precautions, and contraindications to stretching. (D,E)
14. define and discuss the differences between aerobic and anaerobic activity. (A,D,E)
15. discuss the effect of endurance training on selected systems of the body. (A,E)
16. calculate maximum heart rate and target heart rate. (D,E)
17. discuss the common protocols the PT may use in prescribing aerobic conditioning programs. (E)
18. define the 4 components of Health-related Fitness and discuss how they are measured. (C,D)
19. discuss ACSM guidelines for fitness for the healthy adult in terms of modality, frequency, intensity and duration. (D,E)
20. identify the normal responses that occur during exercise in the cardiovascular and pulmonary systems and the appropriate actions to take when identifying abnormal responses. (A,E)
21. define and differentiate the terms coordination, proprioception, kinesthesia and balance and discuss common strategies for progression of activities toward goals related to these terms. (A,B,E)
22. describe options and justification for selection of various modes of strengthening including but not limited to isometric/concentric/eccentric, open/closed chain, manual/mechanical resistance, isotonic/isokinetic as components of therapeutic exercise interventions. (E)
23. identify indications and precautions of strength training programs for the geriatric population. (D,E)
24. describe general goals and indications for resistance exercise. (D,E)
25. discuss and apply fundamental principles of peripheral joint mobilization including the convex-concave rule, grades of mobilization, and indications/contraindications for the use of this intervention therapeutically. (A,D,E)
26. define capsular pattern and recall such for selected peripheral joints. (A,C,E)
27. with supervision, practice the assessment of normal joint mobility and application of selected peripheral joint mobilizations on classmates and instructors using safe technique. (D)
28. demonstrate, based upon given orthopedic PT evaluations (case study) and plan of care, competence in (E):
 - a. categorizing findings from the PT evaluation and hypothetical subjective patient data according to the disablement and ICF models as being examples of pathologies (health conditions), impairments in body structure/function, functional/activity limitations, or disabilities/participation limitations.

- b. describing accurately the rationale for the PT's plan of care in achieving short term/ long term goals.
- c. identifying any interventions within the plan of care that are inappropriate for a PTA and describing an appropriate response to such.
- d. selecting and prioritizing interventions (therapeutic exercise, manual therapy, functional training, etc) and interim assessments appropriate for today's session.
- e. addressing needs related to patient education and discharge planning including home program, equipment needs, and safety issues
- f. identifying equipment needs related to planned interim assessments and interventions and appropriately utilizing that equipment
- g. properly sequencing interventions and assessments for a single session and giving correct rationale for the sequencing.
- h. identifying any precautions or contraindications to components of the POC
- i. accurately describing the appropriate actions to take when identifying changes in patient status.
- j. properly documenting a hypothetical treatment session using vocabulary that (1) conveys the link between interventions used and patient function and (2) reflects the skill required by the PTA in the supervision or execution of the interventions.
- k. describing an appropriate adjustment to or progression of interventions over the course of an episode of care working within the PT's plan of care giving correct rationale for the progression.

29. identify common medical tests/imaging used in the medical and PT diagnosis of selected orthopedic conditions.

30. identify common surgical procedures used in the medical management of orthopedic conditions and the impact of those on the POC established by the PT and implementation of POC by the PTA.

31. identify common categories and names of pharmacologic agents used in the medical management of orthopedic conditions and the implications of those on patient signs/symptoms and physical therapy treatment.

32. recall the basic anatomy and biomechanics of normal movement of the cervical, thoracic and lumbar spine. (A,B)

33. discuss ergonomics of common work and ADL postures and movements as they relate to prevention of injury to and protecting of the spine. (A,D)

34. identify the common mechanisms of injury for, typical clinical presentation of, common rehabilitative and medical management of, and precautions for selected orthopedic conditions affecting the trunk/neck/spine. (A,E)

35. identify characteristics of selected postural deviations in each region of the spine and identify common interventions/exercises used to address those deviations. (A)

36. describe for given orthopedic conditions, the effect of selected positions of the cervical and lumbar regions on the integrity of the intervertebral foramen, the derangement of the intervertebral disc, and the potential for referred symptoms. (A,C)

37. based upon a physical therapy evaluation and plan of care, select, justify, and implement appropriate therapeutic exercises for ROM, flexibility, strengthening, functional training, postural correction and/or balance/stabilization to manage selected orthopedic conditions (including post surgical procedures) of the spine/trunk/neck. (E)

38. demonstrate competency with performance of selected dermatome, myotome and reflex integrity assessment techniques correctly utilizing the associated assessment equipment. (D)

39. recall the basic anatomy and biomechanics of normal motion of the joints of the UE. (A)

40. identify the common mechanisms of injury for, typical clinical presentation of, common rehabilitative and medical management of, and precautions for selected orthopedic conditions affecting the UE. (C, E)
41. recall arthrokinematics of major UE joints and implications for the use of mobilization techniques. (A,E)
42. recall the normal ratios of glenohumeral to scapulothoracic movement during arm elevation and discuss the typical affect on those ratios of selected pathologies/postures involving the shoulder. (A,C)
43. based upon a physical therapy evaluation and plan of care, select, justify, and implement appropriate manual techniques and therapeutic exercises for ROM, flexibility, strengthening, functional training, postural correction and/or coordination to manage selected orthopedic conditions (including post surgical procedures) in the UE. (D, E)
44. recall the basic anatomy and biomechanics of normal motion of the joints of the LE. (A)
45. identify the common mechanisms of injury for, typical clinical presentation of, common rehabilitative and medical management of, and precautions for selected orthopedic conditions affecting the LE. (C, E)
46. recall normal arthrokinematics for the major LE joints and implications for the use of mobilization techniques. (A,D)
47. based upon a physical therapy evaluation and plan of care, select, justify, and implement appropriate manual techniques and therapeutic exercises for ROM, flexibility, strengthening, functional training, postural correction and/or balance/stabilization to manage selected orthopedic conditions (including post surgical procedures) in the LE. (E)
48. accurately describe general mechanics of, criteria for +, implications for treatment of and common causes for + results of selected special tests for the each joint/region of the body. (C,D)
49. demonstrate competency with the performance of selected orthopedic special tests and interim assessments including the vertebral artery test, leg length measurements, Thomas test, Ely's test, Ober's test, and Homan's test. (D)
50. utilize the Evidence Based Practice Page of the APTA website to identify, discuss, and implement/perform a variety of interim functional assessments for selected orthopedic diagnoses based on PT POC. (E)
51. research and discuss the implementation of evidence-based and protocol driven interventions and progressions for selected orthopedic diagnoses based on a PT POC.
52. demonstrate entry level competency with the use of selected equipment/devices including but not limited to Miami J/Cspine orthoses, TLSOs, slings/shoulder orthoses, CPMs, knee immobilizers/braces, positioning devices (hip abduction wedges, ankle/foot splints, resting hand splints) including appropriate interpretation of PT eval/POC on prescribed use, donning/doffing device, patient/caregiver education, and awareness of precautions related to the use of the device. (C,D)
53. participate in one or more approved community service or professional development activity during this semester. (F)

Course Requirements: To earn a grade of “C” or higher the student must earn 70% of the total points for the course and meet all of the following course requirements.

- The student must achieve a passing score of 75% or higher on all lab competency tests
- The student must achieve a minimum 75% average on two integrated laboratory practicals (ILPs)

- The student must complete one or more community service or professional development activity (required for grade of A only)

Course Grading Scale:

- A- 90% or more of total possible points including the comprehensive final exam; and meet all course requirements; and participation in at least one approved community service or professional development activity.
- B- 80% or more of total possible points including the comprehensive final exam; and meet all course requirements.
- C- 70% or more of total possible points including the comprehensive final exam; and meet all course requirements.
- D- 60% or more of total possible points including the comprehensive final exam; and meet all course requirements.
- F- less than 60% of total possible points including the comprehensive final exam; or failure to meet all course requirements

Attendance Policy: The college attendance policy, which is available at <http://www.bpcc.edu/catalog/current/academicpolicies.html>, allows that “more restrictive attendance requirements may apply to some specialized classes such as laboratory, activity, and clinical courses because of the nature of those courses.” The attendance policy of the Physical Therapy Assistant program in described is the Physical Therapy Assistant Clinical Handbook.

Nondiscrimination Statement

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Reviewed by K. Cox 4/23