

**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. recognize abnormal musculoskeletal function and signs of pathophysiology by comparing/contrasting them to normal physiology and function;
- B. communicate effectively in the clinical environment using terminology appropriate in and common to the treatment of orthopedically involved patient;
- C. read and accurately interpret PT examination findings related to selected orthopedic special tests, modifying intervention selections appropriately based upon such;
- D. demonstrate entry-level clinical skill with performance of those selected musculoskeletal, cardiovascular and neuromuscular interim assessments, special tests and interventions commonly utilized by the licensed PTA in orthopedic patient care settings;
- E. appropriately select, justify, sequence, and document interim assessments, interventions and progressions based upon accurate interpretation of physical therapy evaluations and plans of care of orthopedic patients.
- F. 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 inflammatory response to injury. (A)
- 2. list and define the five cardinal signs of inflammation. (A)
- 3. describe management of inflammation using the PRICE method. (B,E)
- 4. list the effects of immobilization on selected musculoskeletal structures. (A,B)
- 5. compare and contrast the stages of tissue healing. (A,B)
- 6. 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)
- 7. identify generally recommended treatment/intervention approaches in terms of therapeutic exercise and modalities to facilitate ligamentous healing, muscle/tendon healing, cartilage healing, or bone healing. (A,B,E)
- 8. describe the typical mechanisms of injury for selected musculoskeletal tissues. (A,B)

9. describe the function and composition of bone. (A,B)
10. describe osteoporosis in terms of pathophysiology, incidence and implications for PT intervention. (B,E)
11. classify fractures based upon site/extent of injury, direction of abnormality, relationship and complications. (A,B)
12. compare and contrast isometric, concentric and eccentric muscle contractions. (A,B,E)
13. describe the parameters for exercise dosage and the factors influencing. (B,E)
14. define delayed onset muscle soreness and describe the pathophysiology of the condition. (A,B,E)
15. define and identify the rationale for the appropriate use of open chain vs. closed chain activities. (C,E)
16. define end-feel and categorize given joint end-feels as normal or abnormal. (A)
17. describe common causes for abnormal end-feels. (A,C)
18. compare and contrast passive, active, and active-assistive range of motion. (D,E)
19. identify indications and contraindications for passive and active range of motion. (D)
20. demonstrate on a laboratory competency entry level skill with performing PROM and manual stretching (static, hold-relax and LLLD) of selected joints/muscles. (D)
21. define, compare and contrast static stretching, ballistic stretching, low load – long duration stretching, dynamic stretching and hold-relax (PNF) stretching. (D,E)
22. recognize the indications, goals, precautions, and contraindications to stretching. (D,E)
23. define and discuss the differences between aerobic and anaerobic activity. (A,D,E)
24. discuss the effect of endurance training on selected systems of the body. (A,E)
25. calculate maximum heart rate and target heart rate. (D,E)
26. discuss the common protocols the PT may use in prescribing aerobic conditioning programs. (E)
27. define the 4 components of Health-related Fitness and discuss how they are measured. (C,D)
28. accurately measure gross grip strength using a dynamometer. (D)
29. perform measurements of HR and BP on a resting and an exercising individual. (D)
30. discuss ACSM guidelines for fitness for the healthy adult in terms of modality, frequency, intensity and duration. (D,E)
31. identify the normal responses that occur during exercise in the cardiovascular and pulmonary systems. (A,E)
32. identify selected abnormal responses to exercise and appropriate actions to take when identifying these responses. (A,C,E)
33. define and differentiate the terms coordination, proprioception, kinesthesia and balance. (A,B,E)
34. discuss in general terms a progression of activities to address balance and coordination goals. (E)
35. describe the rationale for utilizing isometric, concentric or eccentric muscle contractions as components of therapeutic exercise interventions. (E)
36. identify indications and precautions of strength training programs for the elderly. (D,E)
37. describe general goals and indications for resistance exercise. (D,E)
38. discuss fundamental principles of peripheral joint mobilization. (A,D,E)
39. apply the convex-concave rule to identify normal arthrokinematics that should occur during selected joint movements. (A,D,E)
40. define and differentiate grades of joint mobilization. (D)
41. define capsular pattern and recall such for selected peripheral joints. (A,C,E)
42. recognize indications and contraindications for peripheral joint mobilization. (D,E)

43. with supervision, practice the assessment of normal joint mobility and application of selected peripheral joint mobilizations on classmates using safe technique. (D)
44. demonstrate on laboratory competencies and integrated lab practicals, based upon a hypothetical PT evaluation (case study) and plan of care, competence in (E)
  - describing accurately the rationale for the PT's plan of care in achieving short term/ long term goals.
  - identifying any interventions within the plan of care that are inappropriate for a PTA and describing an appropriate response to such.
  - selecting and prioritizing interventions (therapeutic exercise, manual therapy, functional training, etc) and interim assessments appropriate for today's session.
  - addressing needs related to patient education and discharge planning including home program, equipment needs, and safety issues
  - properly sequencing interventions and assessments for a single session and giving correct rationale for the sequencing.
  - identifying any precautions or contraindications to components of the POC
  - accurately describing the appropriate actions to take when identifying changes in patient status.
  - properly documenting a hypothetical session in SOAP note format.
  - 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.
45. recall the basic anatomy and biomechanics of normal movement of the cervical, thoracic and lumbar spine. (A,B)
46. 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)
47. 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)
48. discuss common methods of medical management, rehabilitation, and precautions for selected orthopedic conditions of the trunk/neck/spine. (C,E)
49. identify characteristics of common postural deviations in each region of the spine. (A)
50. 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)
51. discuss common techniques and interventions used for treating postural impairments in the cervical, thoracic, and lumbar regions. (C,E)
52. based upon a physical therapy evaluation and plan of care, select 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)
53. accurately describe general mechanics of, criteria for +, implications for treatment of and common causes for + results of selected special tests for the neck/trunk/spine. (C,D)
54. demonstrate competency with the performance of the vertebral artery test and leg length measurements. (D)
55. demonstrate competency with performance of selected dermatome, myotome and reflex integrity assessment techniques. (D)

56. recall the basic anatomy and biomechanics of normal motion of the joints of the UE. (A)
57. 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)
58. recall arthrokinematics of major UE joints and implications for the use of mobilization techniques. (A,E)
59. 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)
60. based upon a physical therapy evaluation and plan of care, select and implement appropriate 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)
61. accurately describes general mechanics of, criteria for +, implications for treatment of and common causes for + results of selected special tests for the UE. (C)
62. recall the basic anatomy and biomechanics of normal motion of the joints of the LE. (A)
63. 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)
64. recall normal arthrokinematics for the major LE joints and implications for the use of mobilization techniques. (A,D)
65. based upon a physical therapy evaluation and plan of care, select 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) in the LE. (E)
66. accurately describes general mechanics of, criteria for +, implications for treatment of and common causes for + results of selected special tests for the LE. (C)
67. demonstrate competency in the performance of Ober's test, leg length measurements, Thomas test, Ely's test, and hamstring length tests. (D)
68. demonstrate competency in the performance the Homan test. (D)
69. 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.

- pass all lab competencies.
- minimum 75% average on laboratory practical tests
- minimum 75% average on integrated lab practicals
- minimum 75% average on case studies and pre-lecture assignments
- co-curricular community service or professional development (required for grade of A only)

**Course Grading Scale:**

- A- 90% or more of total possible points including the comprehensive final exam; and minimum of 75% average on laboratory practical tests; and pass all lab competencies; and minimum of 75% average on integrated lab practicals 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 minimum of 75% average on laboratory practical tests; and pass all lab competencies; and minimum of 75% average on integrated lab practicals
- C- 70% or more of total possible points including the comprehensive final exam; and minimum of 75% average on laboratory practical tests; and pass all lab competencies; and minimum of 75% average on integrated lab practicals
- D- 60% or more of total possible points including the comprehensive final exam; and minimum of 75% average on laboratory practical tests; and pass all lab competencies; and minimum of 75% average on integrated lab practicals
  
- F- less than 60% of total possible points including the comprehensive final exam; or less than 75% average on laboratory practical tests; or failure to pass all lab competencies; or less than 75% average on integrated lab practicals

**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**

Bossier Parish Community College does not discriminate on the basis of race, color, national origin, gender, age, religion, qualified disability, marital status, veteran's status, or sexual orientation in admission to its programs, services, or activities, in access to them, in treatment of individuals, or in any aspect of its operations. Bossier Parish Community College does not discriminate in its hiring or employment practices.

#### COORDINATOR FOR SECTION 504 AND ADA

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Reviewed by L. Bryant 4/19