

SYLLABUS

- Name of Course:** Spinal Orthopedic Exam LAB (DIAG-739)
- Length of Course:** 10 hours (1 hr lab/wk), 0.5 credit hours
- Course Description:** This is the lab/hands-on portion of the Spinal Orthopedic Exam course. The emphasis of this course will be learning and practicing the spinal orthopedic examination procedures. Additionally, understanding the purpose of each test, their normal and abnormal findings, and significance will be considered.
- Pre-requisites:** Biomechanics of the Spine (TECH-216)
- Co-requisite:** Spinal Orthopedic Exam lecture (DIAG-239)
- Course Offered By:** Clinical Science – Diagnosis Dept.
- Required Texts:** Spinal Orthopedic Exam class notes (Canvas)
- Recommended Texts:** Cipriano. Photographic manual of regional orthopaedic and neurological tests. 5th ed. Lippincott Williams & Wilkins; 2010.
- Reference Texts:**
- *Evans. Instant access to orthopedic physical assessment. 2nd ed. Mosby; 2009.
 - *Gerard J, Kleinfield, S. Orthopaedic testing: a rational approach to diagnosis. Churchill Livingstone; 1993.
 - *Hoppenfeld. Physical examination of the spine and extremities. Appleton-Century-Crofts: 1976.
 - *Magee. Orthopedic physical assessment. 6th ed. Saunders Elsevier; 2013.
 - *Cailliet. Neck and arm pain. 3rd ed. F.A. Davis 1991.
 - *Cailliet. Low back pain syndrome. 5th ed. F.A. Davis; 1995.
 - *Murphy DR, Conservative Management-Cervical Spine Syndromes. Mcgraw-Hill 2000
- DVDs:**
- *Thompson M. Orthopedic testing review. 2007.
 - *Baptista L. Orthopedic exam review. 2004.
 - *Strutin N. Clinic entrance ortho/neuro exam review, 1993.
- Materials:** none
- Method of Instruction:** Lecture, demonstration.

**Evaluation &
Grading Criteria:**

- A: 90-100
- B: 80-89
- C: 70-79
- F: below 70

lab practical final exam (week 10) = 100%

The lab practical exam will consist of identifying & performing three (3) orthopedic exams for a clinical condition, which will be randomly chosen from the following list of 6 conditions:

1. cervical joint disorder (sublux, DJD/spondylosis, etc.)
2. cervical radiculopathy (IVF stenosis, disc herniation)
3. TOS
4. lumbar radiculopathy (IVF stenosis, disc herniation)
5. SI joint disorder
6. lumbar joint disorder (sublux, DJD/spondylosis, etc.)

For each orthopedic exam you choose you must:

- a. name the test (minimal point value)
- b. demonstrate & explain the procedure
- c. explain the positive/abnormal findings or exam results

Grades and the Grading System Final Grades are available online through the CAMS student portal. If there are any questions on grading procedures, computation of grade point average, or the accuracy of the grade report, please contact the Registrar's Office or the Office of Academic Affairs. Grades will be reported and evaluation will be based on the Academic Policies, Procedures, & Services. Please refer to Evaluation Policy (**Policy ID: OAA.0007**)

In order to maintain **Satisfactory Academic Progress**, a student must maintain a 2.0 or better in each and every course. **Any grade less than a C must be remedied by repeating the class.** Please refer to Satisfactory Academic Progress (**Policy ID: OAA.0006**)

Attendance: Please refer to Attendance Policy (**Policy ID: OAA.0002**)

Conduct and

Responsibilities: Please refer to the Personal Conduct, Responsibility and Academic Responsibility Policy (**Policy ID: OAA.0003**)

Make-up Exams: Please refer to Make-up Assessment Policy (**Policy ID: OAA.0001**)

Request for

Special Testing: Please refer to Request for Special Testing (**Policy ID: OAA.0004**)

**Accommodation
for Students with Disabilities:**

If you have approved accommodations, please make an appointment to meet with your instructor as soon as possible. If you believe you require an accommodation, but do not have an approved accommodation letter, please see the Academic Counselor Lori Pino in the Office of Academic Affairs. Contact info: Lpino@lifewest.edu or 510-780-4500 ext. 2061. Please refer to Service for Students with Disabilities Policy (**Policy ID: OAA.0005**)

Electronic Course Management:

Canvas is LCCW's Learning Management System (LMS). Canvas will be used throughout the quarter during this course. Lectures, reminders, and messages will be posted. In addition, documents such as the course syllabus and helpful information about the class project will be posted. Students are expected to check Canvas at least once a week in order to keep updated. The website address for Canvas is <https://lifewest.instructure.com/login/canvas> Please refer to the Educational Technologies Policy (**Policy ID: OAA.0009**)

Course Goals:

The goal of this course is to prepare the student to be able to perform spinal orthopedic examination procedures and assess spinal ranges of motion, to understand the normal and abnormal results, and assist in developing the analytic skills needed to interpret those results in order to diagnose spine-related disorders.

Course Objectives:

Week 1: introduction to cervical spine exam

Discuss inspection findings: Bakody's sign, Rust's sign

Cervical ROM

*Explain and demonstrate the assessment of cervical spine ROM through visualization and instrumentation (inclinometer, CROM)

*Discuss the normal ranges utilized by the LCCW Health Center

Week 2: Cervical orthopedic tests

Describe/demonstrate cervical orthopedic exams and discuss their abnormal findings and significance

*cervical compression test & variations

*neutral

- *lateral flexion (Jackson's)
- *flexion
- *extension
- *rotation
- *maximal cervical compression maneuver
- *modified Spurling test
- *cervical distraction test
- *shoulder depression test
- *Valsalva maneuver
- *Naffziger (jugular compression) test

Week 3: Cervical orthopedic tests - continued

Describe/demonstrate cervical orthopedic and discuss their abnormal findings, and significance

- *Lhermitte's sign
- *Soto-Hall test
- *Brudzinski sign
- *Kernig's test
- *O'Donahue's test

Week 4: TOS orthopedic exams

Describe/demonstrate the tests for neurovascular bundle compression by the scalenes and/or cervical rib, and discuss their abnormal findings, significance

- *Adson's test
- *modified Adson's test

Describe/demonstrate the tests for neurovascular bundle compression between the clavicle and first rib (costoclavicular space), and discuss their abnormal findings, and significance:

- *Costoclavicular test
- *Eden's test

Describe/demonstrate the tests for neurovascular compression by the pectoralis minor, and discuss their abnormal findings, and significance

- *Wright's test
- *reverse Bakody's test

Describe/demonstrate tests for claudication in the upper extremity, and discuss their abnormal findings and significance

- *Intermittent Claudication test
- *Elevated Arm Stress Test
- *Roos test

Describe/demonstrate a test to differentiate radial vs ulnar artery vascular insufficiency, and discuss the abnormal findings, and significance

- *Allen's test

Describe/demonstrate the upper limb tension test (ULTT)

Week 5 Lumbar ROM & lumbar ortho exams

Lumbar ROM

- *Explain and demonstrate the assessment of cervical spine ROM through visualization and instrumentation (inclinometer, CROM)

- *Discuss the normal ranges utilized by the LCCW Health Center

Describe/demonstrate lumbar orthopedic tests, and discuss their abnormal findings and significance:

- *Minor's sign

- *Valsalva maneuver

- *Nafziger (Jugular compression) test

- *Milgrim's test

- *Kemp's test

- *Neri's Bowing test

- *Supported forward bending test (Belt test)

- *Goldthwaite's test

Week 6: Lumbar orthopedic exams - continued

Describe/demonstrate lumbar orthopedic tests, and discuss their abnormal findings and significance

- *SLR

- *Braggard's test

- *Bowstring test

- *Bonnet's test (SLR with internal hip rotation & adduction)

- *WLR

- *Fajerstzajn's test

- *Sitting Lasegue test

- *Bechterew's test

- *Slump test

- *Lindner's test

Week 7 Sacroiliac joint orthopedic tests

Describe/demonstrate tests that help DDX lumbar from sacral sources of low back pain, and discuss their abnormal findings and significance

- *Goldthwaite's test
- *Belt test

Describe/demonstrate tests for sacroiliac dysfunction, and discuss their abnormal findings and significance

- *Fabere Patrick test and Laguerre test
- *Gaenslen's test and Lewin-Gaenslen's test
- *Nachlas test and Ely's sign
- *Yeoman's test
- *Ely's heel-to-buttock test
- *Hibb's test
- *Gapping test
- *Sacroiliac Resisted Abduction test,
- *Iliac Compression test

Week 8 Hip, pelvis - misc tests Thoracic spine

Describe/demonstrate a test for gluteus medius weakness

- *Trendelenberg test

Describe/demonstrate a test for iliopsoas muscle contracture

- *Thomas test

Describe/demonstrate tests to help differentiate structural and functional scoliosis

- *Adams test
- *Side Bending

Describe/demonstrate a test to help differentiate structural and functional kyphosis

- *Prone Extension test

Describe/demonstrate

- *Beever's sign

Describe/demonstrate the Chest Expansion test & the significance of dec. chest expansion.

Describe/demonstrate Schepelman's test, and discuss the abnormal findings and significance

Week 9: Malingering tests (non-organic physical signs)

Review for lab practical

Describe/demonstrate the non-organic physical signs, and discuss their abnormal findings and significance

- *Libman's test
- *Mannkopf's test
- *Burn's Bench test
- *Hoover's test
- *Skin Pinch test

Week 10: lab practical exams

Student Learning Outcomes:

1. The student will demonstrate the ability to assess cervical and lumbar range of motion through visualization and instrumentation (inclinometer), and be able to evaluate a patient's range of motion using the normal measurements as described in the LCCW Health Center manual [PLO: 1, 2, 4]
2. The student will be able to select appropriate spinal orthopedic exams to evaluate different disorders. [PLO: 1, 2, 4, 8]
3. The student will be able to:
 - a. Verbally describe & physically demonstrate the procedure for each test (performance). [PLO: 1, 4]
 - b. Discuss the mechanism(s) of each test [PLO: 1, 4]
 - c. Describe the normal and abnormal findings for each test [PLO: 1, 4]
 - d. Describe and interpret the significance of abnormal findings for each test. [PLO: 1, 4]
4. The student will be able to discuss the major signs, symptoms and mechanisms of injury that suggest the following disorders, and will be able to list the orthopedic tests used to diagnose these disorders. [PLO: 1, 4]
 - * cervical radiculopathy,
 - * thoracic outlet syndrome,
 - *lumbosacral radiculopathy,
 - * sciatic neuropathy,
 - *sacroiliac disorders

Program Learning Outcomes (PLO): Students graduating with a Doctor of Chiropractic degree will be proficient in the following:

1. **ASSESSMENT AND DIAGNOSIS:** An assessment and diagnosis requires developed clinical reasoning skills. Clinical reasoning consists of data gathering and interpretation, hypothesis generation and testing, and critical evaluation of diagnostic strategies. It is a dynamic process that occurs before, during, and after the collection of data through history, physical examination, imaging, laboratory tests and case-related clinical services.
2. **MANAGEMENT PLAN:** Management involves the development, implementation and documentation of a patient care plan for positively impacting a patient's health and well-being, including specific therapeutic goals and prognoses. It may include case follow-up, referral, and/or collaborative care.
3. **HEALTH PROMOTION AND DISEASE PREVENTION:** Health promotion and disease prevention requires an understanding and application of epidemiological principles regarding the nature and identification of health issues in diverse populations and recognizes the impact of biological, chemical, behavioral, structural, psychosocial and environmental factors on general health.
4. **COMMUNICATION AND RECORD KEEPING:** Effective communication includes oral, written and nonverbal skills with appropriate sensitivity, clarity and control for a wide range of healthcare related activities, to include patient care, professional communication, health education, and record keeping and reporting.
5. **PROFESSIONAL ETHICS AND JURISPRUDENCE:** Professionals comply with the law and exhibit ethical behavior.
6. **INFORMATION AND TECHNOLOGY LITERACY:** Information literacy is a set of abilities, including the use of technology, to locate, evaluate and integrate research and other types of evidence to manage patient care.
7. **CHIROPRACTIC ADJUSTMENT/MANIPULATION:** Doctors of chiropractic employ the adjustment/manipulation to address joint and neurophysiologic dysfunction. The adjustment/manipulation is a precise procedure requiring the discrimination and identification of dysfunction, interpretation and application of clinical knowledge; and, the use of cognitive and psychomotor skills.
8. **INTERPROFESSIONAL EDUCATION:** Students have the knowledge, skills and values necessary to function as part of an inter-professional team to provide patient-centered collaborative care. Inter-professional teamwork may be demonstrated in didactic, clinical or simulated learning environments.
9. **BUSINESS:** Assessing personal skills and attributes, developing leadership skills, leveraging talents and strengths that provide an achievable expectation for graduate success. Adopting a systems-based approach to business operations. Networking with practitioners in associated fields with chiropractic, alternative medicine and allopathic medicine. Experiencing and acquiring the hard business skills required to open and operate an on-going business concern. Participating in practical, real time events that promote business building and quantifiable marketing research outcomes
10. **PHILOSOPHY:** Demonstrates an ability to incorporate a philosophically based Chiropractic paradigm in approach to patient care. Demonstrates an understanding of both traditional and contemporary Chiropractic philosophic concepts and principles. Demonstrates an understanding of the concepts of philosophy, science, and art in chiropractic principles and their importance to chiropractic practice.

INSTRUCTIONS for SPINAL ORTHO EXAM LAB PRACTICAL

Your exam will consist of identifying & performing three (3) orthopedic exams for a clinical condition, which will be randomly chosen from the following list of 6 conditions:

1. cervical joint disorder (sublux, DJD/spondylosis, etc.)
2. cervical radiculopathy (IVF stenosis, disc herniation)
3. TOS
4. lumbar radiculopathy (IVF stenosis, disc herniation)
5. SI joint disorder
6. lumbar joint disorder (sublux, DJD/spondylosis, etc.)

For each orthopedic exam you choice you must:

- a. name the test (minimal point value)
- b. demonstrate & explain the procedure
- c. explain the positive/abnormal findings or exam results

NOTE: You must clearly state what the patient experiences. The vague statement “reproduction of symptoms” will not be sufficient. You must state the symptoms that were reproduced or exacerbated. Examples:

The patient experiences a reproduction or exacerbation of ...
...local pain in the cervical (lumbar) spine
...pain, tingling & numbness down the arm (leg)
...pain in the SI joint,
... etc.

Regarding selection of “Appropriate” tests:

1. The tests you chose must be appropriate for the condition. You will NOT receive any credit for an inappropriate test (ex. indicating an SI test when the condition you were given was lumbar radiculopathy, etc.)
2. The tests selected should be representative of the various tests for the condition. Tests should NOT be variations of tests you have already performed, when other good tests are available. (Gaenslen’s and Lewin-Gaenslen’s really are the same test. Rather than doing cervical compression in neutral position, Jackson’s & modified Spurling’s, consider the distraction test, Bakody’s maneuver, Valsalva maneuver, etc.).

You will only receive very minimal credit for performing a test variation when other tests are available.

Examiners will **NOT** provide any prompts during the exam. You will have 3 minutes to complete your exam.

Please prepare & practice so you will be able to complete your exam in the allotted time, as the time limit is firm.