

SYLLABUS

Name of Course: Clinical Spinal Anatomy ANAT-422

Length of Course: 22 hours, 1.5 units

Course Description: This Course provides for the advanced study of anatomy, pathology, radiology and clinical application. Cadaver and photographic materials are combined with radiographic and advanced imaging studies to demonstrate normal and abnormal conditions. These conditions are then correlated with the presenting signs and symptoms to develop applied care plans.

Prerequisites: HC321

Course Offered by: Basic Sciences Department

Required Text:

Ruch W. Atlas of Common Subluxations of the Human Spine and Pelvis. 2014, 2nd ed.

Jackson R. Cervical Syndrome, 1978, 4th ed.

Wicke L. Atlas of Radiologic Anatomy 7th ed. 2004

Brieg A. Adverse Mechanical Tension on the Central Nervous System 1978

Hoppenfeld S. Physical Examination of the Spine and Extremities. 1976

Materials: Cadaver specimens, photographic studies of specimens and x-rays of specimens. Advanced imaging from private practice.

Method of Instruction: 2 hours per week of lecture and a one time, 1 hour laboratory class in the Anatomy Lab following the regular class lecture.

Evaluation/Grading Criteria: Evaluation will be by two written tests, both 50 point tests, for a total of 100 points possible. The Mid-term test will be given at the week 5 and a Final test in week 11, which will be a cumulative test.

Grade Scale:	90-100	A
	80-90	B
	70-80	C
	00-69	F

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.00007)

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.00006)

Attendance: Please refer to Attendance Policy (Policy ID: OAA.00002)

Conduct and Responsibilities: Please refer to the Personal Conduct, Responsibility and Academic Responsibility Policy (**Policy ID: OAA.00003**)

Make-up Exams: Please refer to Make-up Assessment Policy (**Policy ID: OAA.00001**)

Request for Special Testing: Please refer to Request for Special Testing (**Policy ID: OAA.00004**)

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 Deans Office. Contact info: Lpino@lifewest.edu or 510-780-4500 ext. 2061. Please refer to Service for Students with Disabilities Policy (**Policy ID: OAA.00005**)

Electronic Course Management: Canvas is LWCC'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.00009**)

Course Objectives: This course is intended to increase the level of spinal and extremities expertise of Chiropractors. To this end, the course will: cover the anatomical basis of examination procedures; demonstrate and illustrate the tissues of the axial skeleton and extremities and how they appear on x-ray and advanced imaging; investigate the changes in the nervous system due to subluxations; study the effects of

subluxation and resulting deformations on other tissues of the spinal column; give students an understanding of all the structures of the spine, rib cage and pelvis; study the anatomical features of the extremities and the effects of subluxation.

Weekly Breakdown:

Week 1 Introduction, brief review of spinal anatomy and biomechanics of the Central Nervous System. Inspection of the entire vertebral column and muscles and discussion of clinical features observed. Pathology of CNS tension and deformation will be discussed.

Week 2 Review of cervical and neck anatomy. There will be a discussion of imaging and anatomical correlations with Neurological and vascular complications resulting from subluxation. Examination procedures will be reviewed and treatment options will be discussed.

Week 3 Thoracic spine and rib cage anatomy will be reviewed.

Costovertebral and costotransverse articulations will be discussed as well as their relationship to the cervical spine and shoulder function. Imaging of the thoracic spine will be presented and studied. Examination procedures will be reviewed.

Week 4 Upper extremity anatomy will be reviewed, followed by discussion of subluxation patterns, subjective complaints, examination protocols, bracing and stabilizing techniques and exercises.

Week 5 **Mid-term test first hour.**

Second hour: Intervertebral disc anatomy, physiology, appearance on X-ray, CT Scan and MRI imaging.

Week 6 Lumbar spine anatomy will be reviewed, including the anatomy of the disc and their pathological changes. Types of subluxations of the lumbar spine and other injuries will be studied.

Week 7 Beginning review of pelvic girdle anatomy.

Week 8 Continuation of review of pelvic girdle anatomy, function, appearance on imaging, subjective complaints, examination protocols, treatment and management.

Week 9 Begin review of the anatomy of the knee and lower extremity. Examination procedures and clinical problems will be discussed.

Week 10 Continuation of the review of the lower extremity. Examination procedures, treatment protocols will be demonstrated.

Week 11 Treatment protocols for emergency care as well as chronic conditions will be discussed. **Final Exam.**

Student Learning Outcomes:

This course aligns to PLOs: (1 and 3)

1. The student will be able to understand the biomechanics and physiology of the lower central nervous system.
2. The students will demonstrate knowledge of the relationships of the regions of the body, axial and peripheral.
3. The student will become familiar with the clinical reality that peripheral entrapment syndromes and extremity injury can mimic spinal injury or disc involvement.
4. The student will know the ability to distinguish the difference with physical examination.

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.