

## SYLLABUS

**Name of Course:** SPINAL ANATOMY 1- ANAT-118/618 (Lab)

**Length of Course:** 3.5 units, 63 hours (6 hours/week)

**Course Description:** This course is an introduction to the study of the human spine. Basic functional anatomy of the vertebral column, vertebrae, joints, ligaments, relevant neurovascular structures and the spinal cord will be covered. Emphasis will be placed on clinical considerations and its integration with core chiropractic philosophy.

**Prerequisites:** None

**Course Offered by:** Basic Sciences Department

**Required Text:** Spinal Anatomy I Notes

### Recommended

#### Texts:

1. Cramer and Darby, Clinical Anatomy of the Spine, Spinal Cord, and ANS. 3<sup>rd</sup> ed. 201
2. Netter, Atlas of Human Anatomy, 6<sup>th</sup> ed. 2014
3. Clinically Oriented Anatomy; Keith Moore, 7th edition, 2013

### Reference

#### Texts:

1. Thieme, Atlas of Anatomy, General Anatomy and Musculoskeletal System; 2011
2. Rohen & Yokochi, Color Atlas of Anatomy. Seventh Edition, 2011
3. Ruch, Atlas of Common Subluxations of the Human Spine and Pelvis. 2<sup>nd</sup> ed. 2014
4. Bogduk & Twomey, Clinical Anatomy of the Lumbar Spine and Sacrum. Fourth Edition, 2005

5. Walker, Lovejoy, Bedford and Yee, Skeletal and Developmental Anatomy for Students of Chiropractic. 2002

6. White and Panjabi, Clinical Biomechanics of the Spine. Second Edition, 1990  
7. Williams and Warwick, Gray's Anatomy. 40<sup>th</sup> ed. 2008

**Method of Instruction:** Class lectures, Power Point presentations, class assignments.

**Lab Instruction:** Lab instruction will include the use of diagrams, plastic models, bone

specimens, cadaver specimens and photographs, x-rays and model making.

### **Evaluation/Grading**

#### **Criteria:**

- Lecture Quizzes (30 points)
- Midterm Lecture Examination (50 points)
- Final Lecture Examination (70 points)
- Lab assignments/model making (30)
- Lab Midterm (50)
- Lab Final (70 points)

#### **Total Points: 300**

Late students may not sit for an exam after another student has completed the exam and left; the remake procedure will apply.

There are no make-ups for in class assignments or quizzes.

### **Grading**

#### **Procedure**

- |   |  |
|---|--|
| A | Superior work 90 - 100%  |
| B | Above average work 80 - 89%                                      |
| C | Average work 70 - 79%  |
| F | Failure - the student must repeat the entire course 69% or below |

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. In addition to a cumulative grade of C or better, a grade of C or better on the final is required to pass this class.

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**)

**INDEPENDENT STUDENT WORK** All assignments and exams must be the product of the individual student's original efforts for this class, unless otherwise stated by the instructor. Collaboration is prohibited.

All exams must be the product of the individual student's original efforts for this class.

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](mailto: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**)

### **Use of human cadavers and related specimens:**

“Use of the human cadavers through the Willed-Body program at UCSF is contingent upon treating the experience with the utmost respect. Any use of electronic devices, whether cameras, cell phones, or tablets, etc. to capture images of cadavers, portions of the cadavers, or prosected specimens is strictly prohibited and will result in disciplinary sanction. When attending classes where human cadaver material is in use, all electronic devices must be turned off and placed where they are inaccessible to anyone during the period. “

### **Course Goals:**

1. Students will be presented with a study of the anatomy of human spinal column and its function. Topics will include: osteology, vertebral articulations, spinal ligaments, spinal nerves, spinal canal and cord and vascular supply to the spinal column.
2. Hands-on laboratory sessions with diagrams, models, bone specimens and prosections will re- enforce and further develop understanding of spinal anatomy and function as presented in lecture.
3. Selected case histories and x-rays will be presented to illustrate the importance of normal spinal function, and to introduce the student to relevant spinal disorders.
4. All lecture and lab presentations will emphasize the science, art, and philosophy of clinical chiropractic practice.

### **Course Objectives:**

Week 1 Course introduction, review of syllabus, terms of relationship, anatomical planes, introduction to the human spine and anatomy of the typical vertebra.

Week 2 Osteology of the cervical vertebrae and occiput

Week 3 Osteology of the thoracic vertebrae and ribs. The costovertebral articulations

Week 4 Osteology of the lumbar vertebrae, sacrum and coccyx

Week 5 Joints of the spine: common spinal ligaments, intervertebral disc and zygapophysial joints

**Week 6 Lecture Midterm Examination & Lab Midterm Examination**

Week 7 Cervical ligaments

Week 8 Lumbosacral and pelvic ligaments and sacroiliac joint

Week 9 Vertebral canal, spinal cord and spinal nerves. Vascular supply to the spinal cord and canal.

Week 10 Ossification of the vertebral column

**Week 11 Lab Final Examination & Lecture Final Examination**

## **Student Learning Outcomes**

### **(SLO)**

After completing this course, the student will:

1. Be able to define: the anatomical directions, planes of movement and ranges of motion. (PLO: 1)
2. Be able to identify and discuss basic osseous anatomy of the human spine, specifically: the occiput, the cervical, thoracic and lumbar vertebrae, the ribs, the sacrum and the pelvis. (PLO: 1)
3. Know the common vertebral ligaments of the spine, the deep cervical ligaments, the costovertebral ligaments and the lumbo/pelvic ligaments. (PLO: 1)
4. Have an understanding of the basic structure and function of the human spine, including basic functional anatomy of the vertebral

articulations and the intervertebral disc. (PLO: 1,3)

5. Understand the anatomic and functional relationship between the vertebral column and the spinal cord including: anatomy of the spinal canal, surface anatomy of the spinal cord, vascular supply of the spinal cord, and the relationship of the spinal nerves to the vertebral canal. (PLO: 1)

6. Have had an introduction to normal radiology of the spine. (PLO 1, 2)

7. Have been introduced to clinical conditions commonly seen in the chiropractic practice. (PLO: 2,3,7,10)

**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.

## **ANAT- 618 Lab**

### **Materials:**

Plastic articulated spine model

Plastic disarticulated spine—"Bag of Bones"

Coloring

Supplies:

- Colored pencils or
- Colored pens or
- Non-toxic fine point markers
- "Coloring Book" Handouts

Model Making

Supplies:

- Colored duct tape
- Pipe cleaners: suggested colors, yellow, red and blue
- Non-toxic modeling clay or putty. “Silly Putty” is not recommended.
- Scissors