

# SYLLABUS

**Name of Course:** Systemic Physiology Lab – PHYS-622

**Length of Course:** 1 unit, 22 hours, (2 hours lab/week)

**Course Description:** The lab is designed to supplement the Systemic Physiology lecture course. It gives students an opportunity to learn and apply physiological concepts through hands on experience. Students will investigate electrical potentials and electrical fields (electroencephalogram, electromyogram, and electrocardiogram). Clinical skills will be practiced (neurological exam, auscultating heart sounds and blood pressure, palpating peripheral pulses). Problem solving methods will be introduced (case studies, clinical chemistry). The topic of homeostasis will be discussed throughout the quarter as well as imbalances in homeostasis which underlie much pathology.

**Prerequisites:** PHYS-115, ANAT-110

**Required Text:** Class Handouts

**Recommended Text:** Fischbach FT. *Nurse's Quick Reference to Common Laboratory and Diagnostic Tests*. 5<sup>th</sup> ed. 2011  
Nicoll D. *Pocket Guide to Diagnostic Tests*. 6<sup>th</sup> ed. 2012

**Reference Text:** Guyton and Hall. *Textbook of Medical Physiology*. 12<sup>th</sup> ed. 2011

**Materials:** Students should bring a notebook to lab. All other materials will be provided. Students should wear comfortable clothing and shoes, which allow them to exercise (walking, jogging, jumping jacks).

**Method of Instruction:** Short lecture: an introduction to and instructions for lab. Students will then work in small groups or pairs collecting data, performing demonstrations or practicing clinical skills (auscultating heart sounds and blood pressures, cranial nerve exam, spinal reflexes). Results will be discussed following each lab or a written assignment will be given.

## Evaluation/Grading Criteria

**Grading:** Grades will be based on the following

Lab Reports from class	50 points
Midterm	50 points
Final	50 points

## GRADES WILL BE ASSIGNED ACCORDING TO THE FOLLOWING SCALE

A – 4.0	100 – 90%
B – 3.0	89 – 80%
C – 2.0	79 – 70%
F – 0.0	69% or below. Must repeat the course.

**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](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**)

**Course Goals**

The goal of this course is to prepare the student to be able to perform and interpret cranial nerve exams, deep tendon reflex exams, palpatory systolic blood pressure, pulse, and heart sounds. The goal of the class is also to expose to and teach the student how to interpret the basic principles in reading an EEG, EKG, Respiratory, and Hematology lab reports

**Course Objectives**

Week 1 – To discuss mechanisms of the reflex arc and its' use in testing and then perform deep tendon reflex tests and superficial reflex exams

Week 2 – To discuss the various cranial nerve afferent and efferent pathways and then perform cranial nerve exams

Week 3 – To discuss the various principles of blood pressure and then perform pulse assessment and taking as well as palpatory systolic methodology for assessing blood pressure

Week 4 – To discuss the physiology of Heart Sounds and Murmurs and then perform a full heart sound assessment procedure

Week 5 – To discuss electronic methods of monitoring and how to interpret EEGs, EKGs and myographies and then perform examples of the above three

Week 6 – Mid-point review of techniques learned, practice session for techniques learned

Week 7 – To discuss the dynamics of respiratory volumes and then perform volume testing

Week 8 – To discuss and review hematology and the interpretation of blood work-ups

Week 9 – To review the principles behind basic urinalysis exams

Week 10 – Practical Exam

### **Student Learning Outcomes**

1. The student should be able to perform deep tendon reflex tests and interpret the results and similarly interpret a Babinski and Hoffman's sign (PLO 1,,3,4,5,8,10)
2. The student should be able to perform and interpret cranial nerve exams (PLO 1,3,4,5,8,10)
3. The student should be able to perform and interpret palpatory systolic protocol for blood pressure (PLO 1,2,3,4,5,6,10)
4. The student should be able to perform and interpret a pulse assessment (PLO 1,,3,4,5,6)
5. The student should be able to perform and interpret a basic heart sound exam (PLO 1,2,3,4,5,6)
6. The student should be able to demonstrate a baseline knowledge of how to interpret EEGs, EKG, and respiratory volumes testing (PLO 1,2,3,4,5,6,8,10)
7. The student should be able to demonstrate a correct interpretation of standard hematology lab results (PLO 1,2,3,4,5,6)

**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.