SYLLABUS

Name of Course:	Extremity Management – TECH-339
Length of Course:	33 hours (3 hrs. lecture) 2 units
Course Description:	This course is designed to further the students understanding in analysis, diagnosis, and treatment (including physiotherapeutic procedures) of soft tissue injuries of the extremities.
Prerequisites:	Extremity Biomechanics and Examination (DIAG-327)
Course Offered by:	Department of Technique
Department Objective:	To give to our students, freely and out of abundance, the best of our knowledge and skills. To develop the most talented of chiropractors that they may with skill, both find and correct the vertebral subluxation. To do this for the overall betterment, health, and well-being of their patients and the world.
Required Text:	Class notes
Recommended Text:	Hammer WI Functional Soft Tissue Examination and Treatment: New Perspectives. 3rd ed. 2007
Reference Text:	Bergman, T. F., & Peterson, D. H. (2011*).* *Chiropractic Technique:* Principles and Procedures (3rd ed.). Panjabi, M. M., & White, A. A. (2001). *Biomechanics in the Musculoskeletal System*. New York: Churchill Livingstone. Hertling D. *Management of Common Musculoskeletal Disorders* 4th ed. 2006
Method of Instruction:	Lecture-demo with overhead-projection presentation, in-class hands-on.
Materials:	None

Evaluation:		Midterm	=	50% +/-5
		Final	=	50% +/-5
A	(4.0)	Superior work		90-100%
B	(3.0)	Above average work		80-89%
C	(2.0)	Average work		70-79%
F	(0.0)	Failure – The student must repeat course		below 70%

Incomplete – The student has failed to take all required exams and/or has failed to turn in other required work.

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:

This course is designed for students who are interning in our Health Center. Students will concomitantly enroll in or have previously completed an Extremity Adjustment course. Emphasis is placed on the student's understanding of normal extremity joint biomechanics, mechanism of injury of the joint(s) and the interrelation of the extremities with the health of the patient's spine and overall well-being. This approach will improve the student intern's ability to design treatment and rehabilitation programs for the individual patient. Special attention is directed toward sports injuries. Approximately 23 hours are devoted to concepts of analysis and diagnosis and 10 hours are devoted to physical therapeutic applications

Course Objectives:

Week 1: Introduction

1) Instructor will make introductions and explain the role of Chiropractic adjustment and adjunctive procedures in the management of extremity soft tissue injuries

2) Instructor will review the mechanisms of soft tissue injury:
    i) Macrotrauma
    ii) Repetitive microtrauma
    iii) Chronic postures

3) We'll examine the inflammatory and healing process

4) The class will discuss the role of different interventions in the soft tissue healing process including:
    i) Exercise
    ii) Stretching
    iii) Cryotheraphy
    iv) Rest/bracing
    v) Compression

5) The instructor will review the anatomy of the foot and ankle

Week 2: Exercises as an adjunct in extremity management

1) The instructor will discuss the negative effects of immobilization following injury and the importance of early mobilization including:
    i) Adjusting
    ii) PROM/AROM
    iii) Exercise

2) The instructor will review and demonstrate the different types of exercise:

i) Aerobic
ii) Anaerobic:
    (a) Isometric
    (b) Isotonic (fixed and variable resistance)
    (c) Isokinetic

3) The instructor will review and demonstrate the different types of muscle contractions:
    i) Isotonic
    ii) Concentric
    iii) Eccentric

4) The instructor will initiate small group activities to experience the difference between fixed and variable resistance using exercise tubing and free-weights.

Week 3: Foot and ankle biomechanics and injuries

1) The instructor will review anatomy and biomechanics including:
    i) Classical gait cycle
    ii) 3-pivot stance theory
    iii) Pronation/supination of the rear foot
    iv) Windlass mechanism
    v) Functional hallux limitus test

2) The instructor will present foot and ankle lesions, MOI's, history, exam findings, and management protocols including:
    i) Hyperpronation of the subtalar joint
    ii) Ankle sprains
    iii) Plantar fasciitis
    iv) Tarsal tunnel syndrome
    v) Bursitis/tendonitis/tenosynovitis
    vi) Achilles tendonitis
    vii) Compartment syndromes
    viii) Shin splints

3) We'll look at some specific adjunctive applications such as:
    i) Short foot isometric exercises for hyperpronation syndrome and FHL
    ii) Heel wedging/orthotics for foot conditions
    iii) Assessment of weight bearing foot posture with foot levers scanner
    iv) Indications and contraindications for the use of spinal pelvic stabilizers in the management of lower extremity and spinal subluxations and related conditions
    v) SPS prescription
    vi) Post-traumatic and prophylactic ankle bracing

Week 4: Hypertonic muscles, trigger points, and peripheral entrapments

1) The instructor will explain the concepts of:

i) Chronic short tight muscles
ii) Myofascial Pain Syndrome
iii) Janda's Cross Syndrome
iv) Fibroblastic response to loads

2) The instructor will explain, demonstrate, and model
    i) Ischemic Compression

3) The instructor will explain and demonstrate contract/relax stretching

4) The instructor will present and demonstrate myofascial release

5) We will pair up and practice IC contract/relax stretching and MR with further instruction and feedback.

Week 5: Hands-on adjuncts to adjusting continued, knee review:

1) The instructor will review myofascial release and we'll pair up and do more repetitions.
2) We'll do a presentation on transverse friction massage including indications, contraindications treatment time, and technique.

3) The instructor will break up the class and we'll practice doing transverse friction.

4) The instructor will introduce knee biomechanics and some MOIs including:
    i) The concept of closed kinetic chain vs. open kinetic chain movements
    ii) The role of 2-joint muscles in knee joint stability
    iii) Ligament sprains
    iv) Meniscus tears
    v) PFPS and related injuries

Week 6: Meniscus lesions/midterm exam

1) The instructor will review Hx and PE findings associated with meniscus tears and we will discuss conservative management including adjustment and exercise as well as parameters for referral.

2) Review for midterm

3) Midterm exam

Week 7: Selected knee conditions /exercise periodization

1) The instructor will review Hx and PE findings for knee ligament injuries and we will discuss management protocols for the:
    i) ACL
    ii) PCL

iii) Collaterals

2) The instructor will describe the MOIs, findings and management for:
    i) PFPS
    ii) Patellar subluxation
    iii) Chondromalacia patella
    iv) Iliotibial band syndrome
    v) Pes anserine bursitis
    vi) Osgood Schlatter Dx

3) The instructor will discuss the practice of periodization including:
    i) Sely's adaptation ideas
    ii) Plateauing/drug use among athletes
    iii) Manipulating exercises variables to avoid staleness & overtraining

Week 8: Hip lesions/elder exercise/shoulder introduction

1) The instructor will review MOIs , findings, management for selected hip conditions:
    i) DJD
    ii) Flexor tightness/lower cross syndrome
    iii) Quadricep contusions
    iv) ITB syndrome

2) The instructor will review with the class age related sarcopenia and muscle atrophy and discuss ideas for mitigating myocyte apoptosis.

3) We will introduce/review shoulder conditions such as:
    i) Glenohumeral strain/sprain and instability
    ii) A-C s/s and instability
    iii) Frozen Shoulder Syndrome
    iv) Shoulder impingement syndrome

Week 9: Shoulder

1) The instructor will advance protocols for diagnosing and managing shoulder conditions in the Chiropractic practice:
    i) AC joint separation
    ii) Rotator cuff tear
    iii) Bursitis/tendonitis
    iv) Shoulder subluxation
    v) Frozen shoulder

2) We will discuss the critical role of shoulder musculature in maintaining shoulder stability particularly the cuff muscles.

3) We will examine a few studies on shoulder exercises

4) The instructor will demonstrate shoulder exercises from Jobe-Kerlan Clinic

5) We will break into small groups and practice eight exercises for rotator cuff and scapular stability

Week 10: Elbow Injuries / Wrist and Hand Injuries

1) The instructor will discuss the biomechanics, mechanism of injury, orthopedic
2) testing for and management of:
    i) Llbow sprain/strain
    ii) Lateral epicondylitis (tennis elbow)
    iii) Medial epicondylitis (golfer's elbow)
    iv) Peripheral nerve entrapment

3) The instructor will present the diagnosis and management of wrist and hand conditions, particularly:
    i) Carpal tunnel syndrome
    ii) Sprains/strains
    iii) Nerve entrapment syndromes

4) We'll practice:
    i) Application of nighttime extension of nighttime extension splint
    ii) Functional bracing with self-sticking tape
    iii) Finger extension exercises
    iv) Stretch exercise for medial and lateral epicondylitis
    v) Use of a tennis elbow brace as adjunct to elbow adjustment

5) The instructor will review for the comprehensive final exam

Week 11: Final Exam

STUDENT LEARNING OUTCOMES (with associated PLOs):
When the student completes the course, he/she will:
1) Understand an adjustment based approach to extremity management(1,2,3,8,10)
2) Understand/learn additional techniques for testing joint function of extremities(1,8)
3) Be able to diagnose soft tissue injuries of extremities.(1,8,10)
4) Learn to incorporate a variety of physiotherapeutic and other methods for the management of various extremity soft tissue injuries.(2,3,10)
5) Acquire a more thorough understanding of extremity biomechanics and mechanism of injury.(1,3)
6) Learn adjunctive types of exercise, stretches, orthoses (e.g. Foot levelers) and soft tissue procedures and how to apply these in the development of a rehabilitation program based on adjusting.(2,3,10)
7) Have greater confidence in her/his ability to manage more complex patients in a Chiropractic clinical setting.(2,8,10)

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.