SYLLABUS

Name of Course: Management and Adjusting of the Lower Extremity TECH 348 LEC. 848 LAB

Length of Course: 32 hr., 1.5 Units (1hr. Lecture, 2 Hour Lab/Week, 2 hr. Final)

Course Description: This course covers various aspects of Lower extremity adjusting with emphasis on short lever adjusting. Supportive case management and follow-up procedures are included.

Course Goal: To Develop Competencies in the Assessment and Correction of Subluxations of the Extremities of the Human Body.

Prerequisites: TECH-130 DIAG-327

Course Offered By: Technique Department

Required Texts: Hearon KG Advanced Principles of Lower Extremity Adjusting. 1994

Hearon KG What You Should Know about Extremity Adjusting. 9th ed 2005

Recommended Texts:

Hearon KG Advanced Principles of Upper Extremity Adjusting. 1995

Reference Texts: Myers, Thomas Anatomy Trains: Myofascial Meridians for Manual and Movement Therapist 2nd ed. 2009

Functional Soft Tissue Examination and Treatment of Manual Methods 3rd ed. 2007

Souza T. Differential Diagnosis and Management for the Chiropractor 4th ed. 2009

Various reference texts, handouts and reading assignments will be given. Students are responsible for these materials when assigned and will be tested on them.

Methods of Instruction: Lecture, Demonstration, Hands-On Laboratory Experience

Technique Lab Attire Policy:

Healthy clean hygiene is expected from all students. It is recommended that students bring a face cloth and/or towel to place on the table. Towels reduce the need for the use of chemical sanitation treatments on the adjusting tables.

Accessibility to the Spine and Spinal Structures:

- Patient gown - In an effort to recreate a clinical setting and to appropriately facilitate the realistic use of skills relative to professionalism and personal boundaries, “gowns” made of torn or altered t- shirts/garments are not acceptable for this course.
- To maintain modesty and a professional environment, no revealing attire is permitted.
- Covered shoes (sandals and flip flops do not qualify) are required for all participants.

Materials Required:

Patient Gown (preferably waist length)

Skin Marking Pencil

Please check with your instructor for any further instructions for your particular course or if you have any concerns about the appropriateness of specific articles of clothing.

- A current CMR from the Health Center is required to complete the required adjustments in this course.

Evaluation / Grading Criteria:

25% written midterm

43% written final 30% lab final

2 % formative exercises (open lab adjustments, etc.) Total: 100%

Lab adjustments: 3 extremity adjustments with SOAP sheets (3 LE) to be completed by week 10.

Grading is based upon the standardized grading as adopted by the technique department.

Student must repeat course if they fail Lab Final

A	4.0	100 – 93%	
B	3.0	92 – 84%	
C	2.0	83 – 75%	
F	0	0 – 74%	Student must repeat 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)**

Extra Credit: None available at this time – subject to revision

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)**

Note on lab participation:

The labs will consist of instruction in motion and static palpation, signs and symptoms, and how to find the subluxation. Practice format will consist of hands on set ups and practice of the dynamic thrust. Drills will be done to develop a feel for various body types and misalignment patterns. Exercises will be recommended to help the student develop the proper muscle tone and coordination to deliver an adequate dynamic thrust.

Course Objectives:

Week 1: Lecture- Review of last quarters introduction emphasizing the kinematic chain of the lower extremity

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

- Tensegrity field of the LOWER Extremity: This explains the biomechanical concept of how our bones should "FLOAT" in a sea of elastic fabrics. The function of joint motion is to spiral forces away from the bones into the supportive soft tissues.

- Discuss how extremity trauma (ligament loss, fibrosis of repair, subluxation, antalgic alteration of movement) can influence spinal stability

- Instructor will review the mechanisms of soft tissue injury: The body survives by SACRIFICING

(1) Macro-trauma

(2) Repetitive micro-trauma

(3) Chronic postures

(4) DOMS-Delayed Onset Muscle Soreness

● Examine the inflammatory and healing process. (YouTube: The Immune System Explained I – Bacteria Infection, www.youtube.com/watch?v=zQGOcOUBi6s)

Lab.: Examination

● Inspection of the foot looking for: shape &/or anomalies, callus distribution demonstrating weight bearing gait patterns, scars demonstrating history of trauma &/or surgery, location of opportunistic infections in dermatome or peripheral nerve distribution

● Palpation of the foot to identify: bones of the foot, boney landmarks. joint lines, ligament attachments, muscles that insert into the foot, tendon pathways for muscles that insert into the foot, deep and superficial fascia of the foot

Re-Assign: Monograph reading of selected types of massage.

Application of the varied myofascial techniques will be described and practiced.

These techniques will be practiced regionally as we progress through the quarter.

● Myofascial Pain Syndrome Due to Trigger Points

● Swedish massage: It is comprised of five basic strokes:

1) effleurage (sliding or gliding),

2) petrissage (kneading),

3) tapotement (rhythmic tapping),

4) friction (cross fiber) and

5) vibration/shaking.

● Rolfing: Ida Rolf

● Strain / Counter-strain

● Ischemic Compression

● Myofascial Release Technique (Michael Leahy)

Week 2 Lecture- Machines of the Foot - PW (hand out), Windless Mechanism of Hicks/Functional Hallux Limitus (FHL), Machines of the foot, gait analysis “Chi Running”

Lab.: Windless Mechanism of Hicks/Functional Hallux Limitus (FHL), Rear foot adjusting – Talus and ankle Mortise, Calcaneus / Subtalar joint. (machines of the foot - Bicycle Wheel, Jar Lid)

Soft Tissue – TFM, MFR, splitting apart tendon adhesions plantar surface

Muscle testing: Ankle strap Mm, anterior and posterior Tibialis

Week 3 Lecture - Mid foot Machines (Windshield wiper, wet towel, Car Jack)

Lab.: Fore foot Machines (Dropped MTP joint), review all foot adjustments

Muscle testing: review

Week 4 Lecture – Fibula: Distal, interosseus membrane, Proximal. Ankle Strap Mm's of the leg/ankle/foot Peroneus Longus, Brevis and Tertius, Anterior and Posterior Tibialis Mms. Tibia subluxations: Anterior Medial Plateau, Posterior Lateral Plateau (lateral rotation), Lateral shear/translation

Lab.: Ankle Mortise. Leg Mm Myofascial Tx. Tibia subluxations: Anterior MedialPlateau, Posterior Lateral Plateau (lateral rotation), Lateral shear/translation

Muscle testing: Popliteus, Hamstring

Week 5 Lecture Mid Term

Lab.: - Proximal Tibia, Two articulating surfaces: medial Tibial Plateau and medialFemoral Condyle and lateral Tibial Plateau. lateral Femoral Condyle. Tibia "Screw Home" mechanism

Muscle testing: Popliteus, Hamstring

Week 6 Lecture: Patella gliding pressure "Facets", Screw home mechanism and patellatracking, Patellofemoral Pain Syndrome (PFPS), Patellofemoral Arthralgia, Patella Alta and Baja. Meniscus / thigh Mm connection, Plica clicking

Lab.: Patella adjusting, Meniscus release manipulation, Plica

Mm release: Genu Articularis Mm connects to medial synovial plica. Tx-TFM: Mm and plica then strengthen the Quadriceps. Find Trigger points around the knee.

Muscle testing: Quadriceps, Hamstrings, Pes Anserine group

Week 7 Lecture: Hip – AROM, muscles that cross the hip, Piriformis, Gemelli x 2, obturator x 2, Quadratus Femoris, pectineus, TFL, Gluteus Minimus

Lab.: Hip adjustments: reflexive, traction, compression. Soft tissue- all Mm described in lecture.

Muscle testing: Psoas, TFL, Adductors, Gluteus Medius, Piriformis, Rectus Femoris.

Week 8 Lecture: Which gender does the pelvis come apart easier, FEMALE. Sports that involve hitting the ground hard (basketball. Gymnastics, rugby, field hockey, etc.) are likely to displace and "glue" the pubic symphysis together. Lack of normal motion here disrupts the sacroiliac mobility and can cause bone stress reaction through the pubic ramus. Antalgic compensation tightens the hip flexors and adductor muscles. Adjusting ALL THREE pelvic ring articulations is required to normalize the function of muscles that cross the hips.

Lab.: Pelvis – Pubic Symphysis vertical and A to P malposition, Superior Ilium, Sacral apex posterior ("Fake PI")

Week 9 Lecture: TMJ/Cranial. Describe how the sutures of the scull function to "breath" and reflexively help to manage CSF production and flow. And how they move like the gears of a mechanical clock to spiral and dissipate the forces of traumatic injury to the head. This mechanism decreases the incidence of skull fracture by venting the force, creating "Joint Position Error" (JPE), into the sutures of the cranial bones with sacrificial movement. Sacrificial movement sacrifices inter-sutural ligament and neurovascular structures resulting in bleeding within the sutures. Fibrosis of repair "glues" these JPE's of the skull together and the skull becomes misaligned, rigid and less accommodating to future trauma. After trauma has rotated, twisted and sheared the cranial bones, the sockets that receive the mandible in the Temporal bones are no longer symmetrical. One will likely to be anterior and inferior to the other. Treatment to the Mandible and Muscles of mastication will give most patients significant relief. However, if the cranial JPE's are marked, treatment is supportive and/or palliative.

Lab.: First hour – Evaluation of the TMJ and muscles of mastication, Two simple low force TMJ adjustments. Soft tissue treatment of the muscles of mastication.

Second hour – Review for Practical Final

Week 10 Last Lecture: Q & A, Connecting adjustments and management

Laboratory Practical FINAL

Week 11 Lecture Final

Student Learning Outcomes (SLO): At the completion of the TECH-348 course, a student should be able to:

1. Understand the basics of how the extra-spinal biomechanics relate through the trunk to perform complex motion. (Everything is connected)

2. Understand how old resolved traumas leave behind loss of ligament stability, fibrosis of repair to muscle and fascia and regional subluxations and/or joint fixations that cause altered/antalgic movements. Over time these functional impairments will cause secondary, tertiary, etc., repetitive strain injury and predispose the person to new trauma.

3. Demonstrate the ability to Identify Soft tissues, Bones and Joints of the extra-spinal system of the lower extremity.

4. Demonstrate the ability to palpate the joints of the extra-spinal system in multiple Active Ranges of Motion (AROM) and Passive Ranges of Motion (PROM) to find extremity joint subluxation and/or regional joint fixations of the lower extremity.

5. Demonstrate the ability to perform high acceleration / high force with measured depth adjustive trust to the proper contact points for ALL adjustments.

6. Demonstrate the ability to palpate soft tissue impairments in muscle, tendon. ligament, fascia and peripheral neurovascular entrapment of the lower extremity.

7. Demonstrate the ability to perform the myofascial therapy techniques as described in monographs and practiced in Laboratory

8. Demonstrate the ability to perform basic manual muscle testing of the lower extremity

9. Demonstrate the ability to perform every adjustment with a body posture that is balanced and stable as to not injure themselves when performing a successful adjustment.

The following PLO's are mapped to this course: [1, 2, and 7]

Program Learning Outcomes (PLO): Students graduating with a Doctor of Chiropractic degree will demonstrate proficiency 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.