

MT-1312: APPLIED MUSCULO-SKELETAL ANATOMY

Cuyahoga Community College

Viewing: MT-1312 : Applied Musculo-Skeletal Anatomy

Board of Trustees:

May 2024

Academic Term:

Fall 2024

Subject Code

MT - Massage Therapy

Course Number:

1312

Title:

Applied Musculo-Skeletal Anatomy

Catalog Description:

Extensive practice in learning to palpate all bony landmarks of trunk and extremities; muscle, ligament, and tendon palpation. Introduction to postural analysis with practice in taking and interpreting postural measurements.

Credit Hour(s):

3

Lecture Hour(s):

2

Lab Hour(s):

2

Requisites

Prerequisite and Corequisite

MATH-0915 Basic Arithmetic and Pre-Algebra, or qualified Math placement; and ENG-0985 Introduction to College Literacies, or appropriate placement score; or departmental approval.

Note: ENG-0980 Language Fundamentals I taken prior to Fall 2021 will also meet prerequisite requirements.

Outcomes

Course Outcome(s):

Perform bony and soft tissue palpation of trunk and extremities; including muscle, ligament and tendon palpation.

Objective(s):

1. Demonstrate proficiency in locating major bony landmarks of the body.
2. Demonstrate the proper method palpating the various principle sites of the body including: the shoulder, elbow, wrist and hand, head and face, cervical spine, hip and pelvis, and the knee.
3. Identify and spell correctly the names of the various key locations important to massotherapy dealing with the muscles and bony structures.
4. Define the parameters of correct posture and name some of the common postural abnormalities.

Methods of Evaluation:

1. Quizzes
2. Written assignments
3. Oral presentations

4. Written and palpation examinations
5. Homework

Course Content Outline:

1. Soft tissue palpation of the following muscles:
 - a. Facial
 - b. Pectoralis major
 - c. Rectus abdominis
 - d. Quadriceps group
 - e. Tibialis anterior
 - f. Trapezius
 - g. Latissimus dorsi
 - h. Hamstrings group
 - i. Gastrocnemius
 - j. Gluteus
 - k. Biceps
 - l. Triceps
 - m. Flexors and extensors of forearm
2. Shoulder
 - a. Bony palpation of
 - i. Suprasternal notch
 - ii. Sternoclavicular joint
 - iii. Clavicle
 - iv. Coracoid process
 - v. Acromioclavicular articulation
 - vi. Acromion
 - vii. Greater tuberosity of the humerus
 - viii. Bicipital groove
 - ix. Spine of the scapula
 - x. Vertebral border of scapula
 - b. Soft tissue palpation of
 - i. Rotator cuff
 1. Supraspinatus
 2. Infraspinatus
 3. Teres minor
 4. Subscapularis muscles
 - ii. Axilla
 1. Pectoralis major
 2. Serratus anterior
 3. Latissimus dorsi
 - iii. Prominent muscles of shoulder girdle
 1. Pectoralis major
 2. Biceps
 3. Deltoid trapezius
 4. Rhomboid minor and major
 5. Latissimus dorsi
 6. Serratus anterior muscles
3. Elbow
 - a. Bony palpation of
 - i. Medial epicondyle
 - ii. Medial supracondylar line of humerus
 - iii. Olecranon
 - iv. Ulnar border
 - v. Olecranon fossa
 - vi. Lateral epicondyle
 - vii. Lateral supracondylar line of humerus
 - viii. Radial head
 - b. Soft tissue palpation

- i. Medical aspect
 - 1. Wrist flexor muscles
 - 2. Pronator muscle
 - ii. Posterior aspect: triceps muscle
 - iii. Lateral aspect: wrist extensor muscles
 - iv. Anterior aspect:
 - 1. Biceps tendon
 - 2. Brachialis
 - 3. Coracobrachialis
4. Wrist and Hand
- a. Bony palpation of
 - i. Wrist bones
 - ii. Metacarpals
 - iii. Metacarpophalangeal joints
 - iv. Phalanges
 - v. Interphalangeal joints
 - b. Soft tissue palpation of wrist and hand muscles and tendons
5. Head and Face
- a. Bony palpation of head
 - i. Frontal
 - ii. Parietal
 - iii. Temporal
 - iv. Sphenoid
 - v. Ethmoid
 - vi. Occipital bones
 - b. Bony palpation of face
 - i. Nasal
 - ii. Maxilla
 - iii. Zygomatic
 - iv. Mandible
 - v. Palpation of temporomandibular joint
 - c. Soft tissue palpation of
 - i. Sutures of skull
 - ii. Occipitofrontalis muscle
 - iii. Temporalis
 - iv. Masseter
 - v. Orbicularis oculi
 - vi. Orbicularis oris
 - vii. Buccinator muscles
 - viii. Zygomaticus muscle
6. Cervical Spine
- a. Bony palpation of
 - i. Anterior aspect:
 - 1. Hyoid bone
 - 2. Thyroid cartilage
 - 3. First cricoid cartilage
 - ii. Posterior aspect:
 - 1. Occiput
 - 2. Inion
 - 3. Superior nuchal line
 - 4. Mastoid process
 - 5. Spinous process
 - 6. Spinous processes of cervical vertebrae
 - 7. Facet joints
 - b. Soft tissue palpation of
 - i. Anterior aspect:
 - 1. Sternocleidomastoid muscle
 - 2. Lymph node chain

3. Thyroid gland
4. Carotid artery
- ii. Posterior aspect:
 1. Trapezius muscle
 2. Lymph nodes
 3. Greater occipital nerves
 4. Superior nuchal ligament
 5. Splenius capitis and cervicis
 6. Suboccipital muscles
7. Thoracic and Lumbar Spine
 - a. Bony palpation of
 - i. Thoracic vertebrae rib cage
 - ii. Sternum
 - iii. Manubrium and xiphoid process
 - iv. Lumbar vertebrae
 - b. Soft tissue palpation of
 - i. Erector spinae muscles
 1. iliocostalis
 2. longissimus spinalis
 - ii. Quadratus lumborum muscles
 - iii. Rectus abdominis
 - iv. External oblique muscles
 - v. Diaphragm muscle
8. Hip and Pelvis
 - a. Bony palpation of
 - i. Anterior aspect:
 1. Anterior superior iliac spines
 2. Anterior inferior iliac spines
 3. Iliac crest
 4. Iliac tubercle
 5. Greater trochanter
 6. Pubic tubercles
 - ii. Posterior aspect:
 1. Posterior superior iliac spine
 2. Sacrum
 3. Sacroiliac joint
 4. Posterior superior iliac spines
 5. Greater trochanter
 6. Ischial tuberosity
 - b. Soft tissue palpation of
 - i. Femoral triangle
 - ii. Sacrotuberous ligament
 - iii. Sciatic nerve
 - iv. Hip and pelvic muscles
 1. Flexors
 - a. Iliopsoas
 - b. Sartorius
 - c. Rectus femoris
 - d. Tensor faciae latae
 2. Adductors
 - a. Gracilis
 - b. Pectineus
 - c. Adductor longus
 - d. Adductor brevis
 - e. Adductor magnus
 3. Abductors: gluteus medius
 4. Extensors
 - a. Gluteus maximus
 - b. Hamstrings

5. Lateral rotators
 - a. Piriformis
 - b. Obturator internus and externus
 - c. Gemellus superior and inferior
 - d. Quadratus femoris
9. Knee
 - a. Bony palpation of
 - i. Medial aspect
 1. Medial tibial plateau
 2. Tibial tubercle
 3. Medial femoral condyle
 4. Adductor tubercle
 - ii. Lateral aspect
 1. Lateral tibial plateau
 2. Lateral tubercle
 3. Lateral femoral condyle and epicondyle
 4. Head of fibula
 5. Trochlear groove and patella
 - b. Soft tissue palpation of
 - i. Anterior aspect
 1. Quadriceps
 2. Infrapatellar tendon
 - ii. Medial aspect
 1. Sartorius
 2. Gracilis and semitendinosus muscles
 - iii. Lateral aspect
 1. Biceps femoris tendon
 2. Iliotibial tract
 - iv. Posterior aspect
 1. Popliteal fossa
 2. Gastrocnemius muscle
10. Foot and Ankle
 - a. Bony palpation of
 - i. Medial aspect
 1. Head of first metatarsal bone
 2. Metatarsophalangeal joint
 3. First cuneiform
 4. Head of talus
 5. Medial malleolus
 - ii. Lateral aspect
 1. First metatarsal bone
 2. First metatarsophalangeal joint
 3. Calcaneus
 4. Lateral malleolus
 - b. Soft tissue palpation of:
 - i. Plantar aponeurosis
 - ii. Tibialis anterior and tibialis posterior tendons
 - iii. Flexor digitorum longus tendon
 - iv. Flexor hallucis longus tendon
 - v. Extensor digitorum longus tendon
 - vi. Extensor hallucis longus tendon
 - vii. Peroneus longus and brevis tendons

Resources

Biel, Andrew. *Trail Guide to the Body*. 6th ed. Books of Discovery, 2019.

Tortora, Gerald J. and Derrickson, Bryan. *Principles of Anatomy and Physiology*. 16th ed. Grand Rapids, MI: Harper Collins Publishers, 2021.

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