

**KINES 80 Course Outline as of Fall 2023****CATALOG INFORMATION**

Dept and Nbr: KINES 80 Title: INTRO APPL KINES &amp; ANAT

Full Title: Introduction to Applied Kinesiology and Anatomy

Last Reviewed: 11/28/2022

Units	Course Hours per Week		Nbr of Weeks		Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	6	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly:

**Catalog Description:**

Students learn applied Kinesiology and anatomy by examining the anatomical structure and function of the musculoskeletal system as it relates to human movement and exercise. Muscular analysis and practical application, including strengthening and flexibility exercises for each muscle will be emphasized. Students will also study physiological and biomechanical principles.

**Prerequisites/Corequisites:****Recommended Preparation:****Limits on Enrollment:****Schedule of Classes Information:**

Description: Students learn applied Kinesiology and anatomy by examining the anatomical structure and function of the musculoskeletal system as it relates to human movement and exercise. Muscular analysis and practical application, including strengthening and flexibility exercises for each muscle will be emphasized. Students will also study physiological and biomechanical principles. (Grade Only)

Prerequisites/Corequisites:

Recommended:

Limits on Enrollment:

Transfer Credit: CSU;

Repeatability: Two Repeats if Grade was D, F, NC, or NP

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>	Effective:	Inactive:
<b>CSU GE:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>IGETC:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>CSU Transfer:</b>	Transferable	Effective: Fall 2010	Inactive:
<b>UC Transfer:</b>		Effective:	Inactive:

**CID:**

**Certificate/Major Applicable:**

Both Certificate and Major Applicable

## **COURSE CONTENT**

### **Student Learning Outcomes:**

At the conclusion of this course, the student should be able to:

1. Use correct anatomical terminology when describing a particular movement or exercise.
2. Identify and analyze exercises or movements related to muscle groups using the principles of biomechanics and neuromuscular properties.

### **Objectives:**

At the conclusion of this course, the student should be able to:

1. Demonstrate knowledge of correct anatomical terminology used to describe body part locations, position, and direction.
2. Describe the various types of bones, muscles, and joints in the human body and their location, movements, and characteristics.
3. Explain basic neuromuscular concepts and muscle properties in relation to how muscles function in joint movement and work together in affecting motion.
4. Demonstrate knowledge of the principles of biomechanics.
5. Locate the major muscles of the human body, including origin, insertion, and action.
6. Identify the location, movements, and muscles associated with all the joints in the body.
7. Analyze exercises of the upper extremity, trunk, and lower extremity to determine the joint movements, types of contractions, and specific muscles involved in those movements.

### **Topics and Scope:**

- I. Foundations of Structural Kinesiology
  - A. Anatomical directional terminology
  - B. Planes of motion
  - C. Skeletal System
    1. Axial Skeleton

2. Appendicular Skeleton
  3. Classification of Bones
  4. Bone features, properties, and markings
  5. Bone development and growth
- D. Joints
1. Structural classification
  2. Functional classification
  3. Terms describing joint movements
- II. Neuromuscular Fundamentals
- A. Muscle nomenclature
  - B. Muscle shape and fiber arrangement
  - C. Muscle tissue properties
  - D. Muscle terminology
  - E. Types of muscle action
  - F. Role of muscles
  - G. Neural control of voluntary movement
  - H. Proprioception and kinesthesia
  - I. Neuromuscular concepts
- III. Biomechanics
- A. Levers, pulleys, wheels, and axles
  - B. Laws of motion and physical activities
  - C. Friction
  - D. Balance, equilibrium, and stability
  - E. Force and mechanical loading
- IV. The Shoulder Girdle and Shoulder Joint
- A. Bones, nerves, joints and movement of the shoulder girdle and shoulder joint
  - B. Muscles of the shoulder girdle and shoulder joint
    1. Location and action
    2. Origin and Insertion
    3. Palpation and Innervation
    4. Application, strengthening, and flexibility
- V. The Elbow and Radioulnar Joints
- A. Bones, nerves, joints and movement of the elbow and radioulnar joints
  - B. Muscles of the elbow and radioulnar joints
    1. Location and action
    2. Origin and insertion
    3. Palpation and innervation
    4. Application, strengthening, and flexibility
- VI. The Wrist and Hand Joints
- A. Bones, nerves, joints and movement of the wrist and hand joints
  - B. Muscles of the wrist and hand joints
    1. Location and action
    2. Origin and insertion
    3. Palpation and innervation
    4. Application, strengthening, and flexibility
- VII. Muscular Analysis of Upper Extremity Exercises
- A. Upper extremity activities
  - B. Analysis of movement
  - C. Open and closed kinetic chain
  - D. Overload, SAID (Specific Adaptations to Imposed Demands) principle, specificity, and muscular development
  - E. Valsalva maneuver

- F. Analysis of upper body exercises
- VIII. The Hip Joint and Pelvic Girdle
  - A. Bones, nerves, joints and movement of the hip joint and pelvic girdle
  - B. Muscles of the hip joint and pelvic girdle
    - 1. Location and action
    - 2. Origin and insertion
    - 3. Palpation and innervation
    - 4. Application, strengthening, and flexibility
- IX. The Knee Joint
  - A. Bones, nerves, joints, and movement of the knee joint
  - B. Muscles of the knee joint
    - 1. Location and action
    - 2. Origin and insertion
    - 3. Palpation and innervation
    - 4. Application, strengthening, and flexibility
- X. The Ankle and Foot Joints
  - A. Bones, nerves, joints and movement of the ankle and foot joints
  - B. Muscles of the ankle and foot joint
    - 1. Location and action
    - 2. Origin and insertion
    - 3. Palpation and innervation
    - 4. Application, strengthening, and flexibility
- XI. The Trunk and Spinal Column
  - A. Bones, nerves, joints and movement of the trunk and spinal column
  - B. Muscles of the trunk and spinal column
    - 1. Location and action
    - 2. Origin and insertion
    - 3. Palpation and innervation
    - 4. Application, strengthening, and flexibility
- XII. Muscular Analysis of Trunk and Lower Extremity Exercises
  - A. Lower extremity activities
  - B. Analysis of movement
  - C. Analysis of lower body exercises

**Assignment:**

- 1. Weekly reading in textbook (1-2 chapters)
- 2. Assignments based on textbook readings and in-class discussion
- 3. Written and/or oral exercise analysis reports and case studies
- 4. Quizzes and exams

**Methods of Evaluation/Basis of Grade:**

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Assignments based on textbook readings and in-class discussion
----------------------------------------------------------------

Writing 20 - 40%
---------------------

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Written and/or oral exercise analysis reports and case studies

Problem solving  
0 - 20%

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None

Skill Demonstrations  
0 - 0%

**Exams:** All forms of formal testing, other than skill performance exams.

Quizzes and exams

Exams  
20 - 40%

**Other:** Includes any assessment tools that do not logically fit into the above categories.

Participation and attendance

Other Category  
20 - 30%

**Representative Textbooks and Materials:**

Kinetic Anatomy. 4th ed. Behnke, Robert and Plant, Jennifer. 2021.  
Instructor prepared materials