

Glendale College

Course Outline of Record Report

Course ID 003006
Cyclical Review - November 2025

KIN151 : Introduction to Exercise Science

General Information

Author:	<ul style="list-style-type: none"> Erin Calderone
Attachments:	Minutes 12_13_24 (2).docx DE Addendum_KIND_151 COR_9:27:2023 CoDE_11:28:2023.pdf
Course Code (CB01) :	KIN151
Course Title (CB02) :	Introduction to Exercise Science
Department:	KIN
Proposal Start:	Fall 2026
TOP Code (CB03) :	(0835.20) Fitness Trainer
CIP Code:	(31.0507) Physical Fitness Technician.
SAM Code (CB09) :	D - Possibly Occupational
Distance Education Approved:	Yes
Will this course be taught asynchronously?:	Yes
Course Control Number (CB00) :	CCC000506843
Curriculum Committee Approval Date:	11/26/2025
Board of Trustees Approval Date:	01/13/2026
Last Cyclical Review Date:	11/26/2025
Course Description and Course Note:	KIN 151 introduces the scientific concepts and methods in kinesiology, including functional anatomy, biomechanics, and exercise physiology. Students apply principles and theories to sport and exercise scenarios, evaluating both acute responses and chronic adaptations to exercise training. In the laboratory, students practice the application of standardized testing and field assessments in biomechanics, exercise physiology, and fitness training.
Justification:	Mandatory Revision
Academic Career:	<ul style="list-style-type: none"> Credit
Mode of Delivery:	<ul style="list-style-type: none"> In-Person Remote Hybrid Online
Author:	No value
Course Family:	No value

Academic Senate Discipline

Primary Discipline:	<ul style="list-style-type: none"> Kinesiology
Alternate Discipline:	<ul style="list-style-type: none"> Physical Education
Alternate Discipline:	No value

Last Course Offering

When was this course last offered (term and year)?

Fall 2025

Course Development

Basic Skill Status (CB08)

Course is not a basic skills course.

Allow Students to Gain Credit by Exam/Challenge

Course Special Class Status (CB13)

Course is not a special class.

Pre-Collegiate Level (CB21)

Not applicable.

Grading Basis

- Grade with Pass / No-Pass Option

Course Support Course Status (CB26)

Course is not a support course

General Education and C-ID

General Education Status (CB25)

Not Applicable

Transferability

Transferable to both UC and CSU

Transferability Status

Approved

GCC General Education Requirements

Area	Status	Approval Date	Comparable Course	
Area 5: Natural Sciences	Natural Sciences	Approved	09/02/2025	No Comparable Course defined.

Cal-GETC

Area	Status	Approval Date	Comparable Course	
Area 5B: Biological Science	Biological Science	Pending	No value	No Comparable Course defined.
Area 5C: Laboratory	Laboratory	Pending	No value	

Units and Hours

Summary

Minimum Credit Units (CB07)	4
Maximum Credit Units (CB06)	4
Total Course In-Class (Contact) Hours	108

Total Course Out-of-Class Hours 108

Total Student Learning Hours 216

Credit / Non-Credit Options

Course Type (CB04)

Credit - Degree Applicable

Noncredit Course Category (CB22)

Credit Course.

Noncredit Special Characteristics

No Value

Course Classification Code (CB11)

Credit Course.

Variable Credit Course

Funding Agency Category (CB23)

Not Applicable.

Cooperative Work Experience Education Status (CB10)

Weekly Student Hours

	In Class	Out of Class
Lecture Hours	3	6
Laboratory Hours	3	0
Studio Hours	0	0

Course Student Hours

Course Duration (Weeks)	18
Hours per unit divisor	0
Course In-Class (Contact) Hours	
Lecture	54
Laboratory	54
Studio	0
Total	108
Course Out-of-Class Hours	
Lecture	108
Laboratory	0
Studio	0
Total	108

Time Commitment Notes for Students

No value

Units and Hours - Weekly Specialty Hours

Activity Name	Type	In Class	Out of Class
No Value	No Value	No Value	No Value

Prerequisites, Corequisites, Recommended Corequisites, and Recommended Preparation

Advisory

ESL151 - Reading and Composition V (in-development)

Objectives

- Read and critically analyze various academic readings.
- Employ basic library research techniques.

OR

Advisory

ABSE186 - Essentials in Reading and Paragraph Writing

Outcomes

- Use reading comprehension strategies in order to respond with critical analysis.
- Analyze and use evidence from given texts to support claims.

OR

Advisory

ABSE187 - Preparation for College Reading and Composition

Outcomes

- Read, analyze, and evaluate concepts within literary and nonfiction texts.

AND

Advisory

BIOL115 - Human Biology

Objectives

- Identify the body systems, their organs and functions.
- Describe the structure and functions of the cell and its organelles.
- Describe the cause and effect of selected major diseases and conditions of the human body.
- Correctly use basic body directional terminology.

Entry Standards

Entry Standards

Description

Perform moderate physical activity.

No Value

Course Limitations

Cross Listed or Equivalent Course

Description

No value

No value

Requisite Validation

Upload Statistical Validation and/or other documents (if necessary)

No Value

Specifications

Methods of Instruction

Methods of Instruction Lecture

Methods of Instruction Laboratory

Methods of Instruction Discussion

Methods of Instruction Multimedia

Methods of Instruction Demonstrations

Methods of Instruction Field Activites (Trips)

Methods of Instruction Guest Speakers

Methods of Instruction Presentations

Out of Class Assignments

- Case studies (e.g. written analysis of energy systems used in sprinting)
- Self-reflections (e.g. written analysis of exercise testing results)
- Research assignments (e.g. review of research on the effects of altitude on exercise performance)
- Research projects (e.g. individual or group research in kinesiology testing or training techniques)

Methods of Evaluation	Description of Activity/Interaction
Exam/Quiz/Test	Quizzes
Activity (answering journal prompt, group activity)	Laboratory data collection
Writing Assignment	Laboratory data analysis write-ups
Exam/Quiz/Test	Written exams
Presentation (group or individual)	Group laboratory hypothesis testing using research methods in kinesiology, and presentations of methods and results.

Textbook Rationale
 These textbooks are the most current versions and used in conjunction with the OER.

Textbooks				
Author	Title	Publisher	Date	ISBN
Robert Murray	Practical Guide to Exercise Physiology	Human Kinetics	2021	9781492599050
Cedric X. Bryant et. al.	The exercise professional's guide to personal training : a client-centered approach to inspire active lifestyles	American Council on Exercise, San Diego, California	2020	9781890720766
Jeffrey M. Janot, Nicholas M. Beltz	Laboratory Assessment and Exercise Prescription Ebook With HKPropel Online Video	Human Kinetics	2023	9781718214903

Other Instructional Materials (i.e. OER, handouts)

Description	Anatomy and Physiology 2e
Author	J. Gordon Betts, Tyler Junior College Kelly A. Young, California State University, Long Beach James A. Wise, Hampton University Eddie Johnson, Central Oregon Community College Brandon Poe, Springfield Technical Community College Dean H. Kruse, Portland Community College Oksana Korol, Aims Community College Jody E. Johnson, Arapahoe Community College Mark Womble, Youngstown State University Peter DeSaix, University of North Carolina at Chapel Hill
Citation	CC-BY-4.0
Online Resource(s)	https://openstax.org/details/books/anatomy-and-physiology-2e
Description	OER Lab Manual
Author	OER materials and Instructor-Generated materials
Citation	No value
Online Resource(s)	No value

Learning Outcomes

Course Objectives

Describe the functional anatomy of the human body.

Explain the principles of basic biomechanics pertaining to exercise.

Describe the basic concepts of kinesiology pertaining to exercise.

Explain the fundamental concepts of exercise physiology.

Analyze the acute and chronic effects of different exercise stimuli on the physiological response of the human body.

Apply scientific principles to exercise and fitness protocols.

Demonstrate laboratory and field testing protocols in kinesiology.

Relate theories of biomechanics and exercise physiology to the application of laboratory and field testing.

Explore research methods and laboratory procedures in kinesiology, biomechanics, and exercise physiology.

SLOs

Describe the functional anatomy and physiology of the human body as it relates to the acute exercise response and chronic adaptations to exercise training. Expected Outcome Performance: 70.0

Apply the principles of biomechanics and kinesiology to exercise movements. Expected Outcome Performance: 70.0

<p>ILOs Core ILOs</p>	<p>Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas.</p>
	<p>Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems.</p>
<p>K/IN Fitness Specialist Certificate</p>	<p>Apply fundamental science of kinesiology to assess, design, implement and lead fitness programs for individuals and groups in a diverse population.</p> <p>Demonstrate knowledge, skills and abilities required for the ACE Personal Trainer and Group Fitness Instructor exams.</p>

<i>KIN</i> Fitness Specialist A.S. Degree	Apply fundamental science of kinesiology to assess, design, implement and lead fitness programs for individuals and groups in a diverse population. Demonstrate knowledge, skills and abilities required for the ACE Personal Trainer and Group Fitness Instructor exams.
<i>KIN</i> KIN 151	Apply fundamental science of kinesiology to assess, design, implement, and lead fitness programs for individuals.
<i>KIN</i> Sports Coaching-- Certificate	Evaluate, compare and examine skill development, different types of tactics and strategies, coaching philosophies, leadership styles, and practice organization to enhance the growth of student-athletes.
<i>KIN</i> Sports Coaching - A.S. Degree Major	Evaluate, compare and examine skill development, different types of tactics and strategies, coaching philosophies, leadership styles, and practice organization to enhance the growth of student-athletes.
<i>KIN</i> Fitness Specialist - A.S. Degree Major	apply fundamental science of kinesiology to assess, design, implement and lead fitness programs for individuals and groups in a diverse population apply knowledge, skills and abilities required for the NASM-CPT and AFAA-GFI exams
<i>KIN</i> Fitness Specialist - Certificate	apply fundamental science of kinesiology to assess, design, implement and lead fitness programs for individuals and groups in a diverse population demonstrate knowledge, skills and abilities required for the NASM-CPT and AFAA-GFI exams
Collect and analyze data in laboratory and field tests.	Expected Outcome Performance: 70.0

Additional SLO Information

Does this proposal include revisions that might improve student attainment of course learning outcomes?

Yes

Is this proposal submitted in response to learning outcomes assessment data?

Yes

If yes was selected in either of the above questions for learning outcomes, explain and attach evidence of discussions about learning outcomes.

The SLO data point to the importance of breaking up the SLOs to identify student needs. Functional anatomy and exercise physiology tend to be challenging topics for students and should therefore have their own SLOs. This will allow for better tracking of student learning over time.

The laboratory necessitates its own SLO as students are developing skills in collecting and analyzing laboratory data. This SLO is replacing "Analyze exercise training methods using scientific principles" which did not always have its own assessment year over year and can also be encompassed in the first two SLOs.

This course is also being re-submitted for Cal-GETC and has been approved for local GE Area 5 Natural Sciences. Therefore it is important to update the course to emphasize theory and methodology and not only the application of exercise science for personal trainers and group fitness instructors.

SLO Evidence

Results Explorer KIN 151.pdf

Course Content

Lecture Content

Introduction to Functional Anatomy (12 hours)

- Nervous system
- Musculoskeletal system
- Basic skeletal anatomy
- Joint anatomy
- Skeletal muscles from major muscle groups
- Origin/insertion
- Action
- Application to posture and exercise movements
- Cardiorespiratory system

Introduction to Basic Biomechanics (5 hours)

- Planes of motion
- Levers
- Force and power

Introduction to Kinesiology (6 hours)

- The kinetic chain
- Types of muscle actions
- Length-tension relationships
- Force-velocity curve

Motor Development (2 hours)

- Motor learning of exercise
- Changes in motor control across the lifespan

Neuromuscular System (6 hours)

- Nervous system
- Functional anatomy
- Autonomic nervous system
- Neuromuscular integration
- Proprioceptors
- Muscular contraction
- Muscle fiber types
- Sliding filament theory

Energy Production (9 hours)

- Bioenergetics
- Anaerobic metabolism
- Aerobic metabolism
- Metabolic integration during exercise
- Endocrine system
- Hormonal response to exercise
- Metabolic regulation during exercise

Effects of Exercise (14 hours)

- Homeostasis
 - Blood pressure regulation
 - Negative feedback loop
 - Postural effects
- Acute effects of exercise
 - Cardiorespiratory endurance exercise
 - Resistance exercise
 - Sources of fatigue
 - Training protocols
- Chronic effects of exercise
 - Endurance exercise
 - Resistance exercise
 - Specificity of training programs
 - Mechanical specificity
 - Neuromuscular specificity
 - Metabolic specificity
 - Periodization and preventing overtraining syndrome
- Evaluating efficacy of training programs
- Exercise guidelines for special populations and chronic conditions (e.g. youth, older adults, pregnancy/postpartum, weight management, diabetes, hypertension, cancer, musculoskeletal issues, disabilities, etc.)
 - Scientific rationale
 - Adaptations to training protocols

Total hours: 54**Laboratory/Studio Content****Functional Anatomy Lab (10 hours)**

- Skeletal anatomy
- Joint actions
- Major muscle groups
- Origin/insertion of skeletal muscles
- Muscle actions and common exercises

Biomechanics Lab (6 hours)

- Surface electromyography
- Force production
- 1-rep max testing
- Multiple-rep max testing
- Muscular endurance tests
- Measuring Power
 - Vertical jump test
 - Long jump test

Kinesiology Lab (6 hours)

- Static Posture
- Range of motion assessments
- Functional movement assessments

Physiology Lab -- Resting measurements (9 hours)

- Anthropometric measures
- Height
- Weight
- Circumference measurements
- Body Mass Index
- Body composition
- Skinfolds
- Bioelectrical impedance
- Resting blood pressure and postural effects

Exercise Physiology Lab (18 hours)

- Exercise blood pressure
 - Blood pressure during aerobic exercise
 - Blood pressure during resistance training
- Resting metabolic rate (RMR)
- Energy expenditure calculations
- Estimating caloric expenditure
- Cardiorespiratory sub-maximal and maximal tests (VO₂max)
- Field tests to estimate VO₂max
 - 1.5 mile run
 - Rockport walk test
 - Step-test
- Lactate and ventilatory thresholds (VT)
 - Field tests to estimate VT1 and VT2

Scientific Method and Research in Kinesiology (5 hours)

- Scientific method
 - Evidence based reasoning
 - Hypothesis testing
 - Qualitative and quantitative research
 - Laboratory research methods
 - Research study design
 - Epidemiological research
 - Randomized controlled trials

Total hours: 54

Additional Information**Repeatability**

Not Repeatable

Justification (if repeatable was chosen above)

No Value

Is it possible this course will have a material fee?

No

I have contacted my library liaison (<https://campusguides.glendale.edu/faculty/liaisons>):

Yes

What term(s) will this course be offered?

Fall

Will any additional resources be needed for this course? (Click all that apply)

- No

If additional resources are needed, add a brief description and cost in the box provided.

No Value