

KINS 150: EXERCISE AND SPORT PHYSIOLOGY

In Workflow

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Approval Path

1. Fri, 26 Apr 2019 02:11:04 GMT
Rodney Imamura (rimamura): Approved for KHS Committee Chair
2. Fri, 26 Apr 2019 22:48:52 GMT
Katherine Jamieson (katherine.jamieson): Approved for KHS Chair
3. Tue, 07 May 2019 23:21:50 GMT
Kisun Nam (knam): Rollback to KHS Chair for HHS College Committee Chair
4. Thu, 19 Sep 2019 21:10:03 GMT
Michael Wright (wrightm): Approved for KHS Chair
5. Fri, 27 Sep 2019 00:36:13 GMT
Kisun Nam (knam): Approved for HHS College Committee Chair
6. Sat, 28 Sep 2019 14:05:47 GMT
Mary Maguire (maguirem): Approved for HHS Dean

Date Submitted: Thu, 25 Apr 2019 23:36:27 GMT

Viewing: KINS 150 : Exercise and Sport Physiology

Last edit: Thu, 19 Sep 2019 16:49:12 GMT

Changes proposed by: Andrea Becker (101053364)

Contact(s):

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Catalog Title:

Exercise and Sport Physiology

Class Schedule Title:

Exercise and Sport Physiology

Academic Group: (College)

HHS - Health & Human Services

Academic Organization: (Department)

Kinesiology and Health Science

Will this course be offered through the College of Continuing Education (CCE)?

No

Catalog Year Effective:

Spring 2020 (2020/2021 Catalog)

Subject Area: (prefix)

KINS - Kinesiology

Catalog Number: (course number)

150

Course ID: (For administrative use only.)

145056

Units:

3

In what term(s) will this course typically be offered?

Fall, Spring

Does this course require a room for its final exam?

Yes, final exam requires a room

Does this course replace an existing experimental course?

No

This course complies with the credit hour policy:

Yes

Justification for course proposal:

This proposal presents a change in the prerequisites for this course. The BS in Kinesiology currently requires Bio 30, but in order to comply with Executive Order 1071, we have created a 31 unit core and have included Bio 25 and Bio 26, which are now the appropriate prerequisites for this course.

There are no content or course changes.

Course Description: (Not to exceed 80 words and language should conform to catalog copy.)

Sports physiology with special emphasis on studying the various systems in the body that are involved in work, exercise and sport. Training programs to improve these systems and their responses will be discussed in a wide variety of settings including exercise for health, fitness, recreation, and sports competition. Lecture two hours; laboratory 2.5 hours.

Are one or more field trips required with this course?

No

Fee Course?

No

Is this course designated as Service Learning?

No

Does this course require safety training?

No

Does this course require personal protective equipment (PPE)?

No

Course Note: (Note must be a single sentence; do not include field trip or fee course notations.)

Does not satisfy exercise physiology requirement for Exercise Science majors

Does this course have prerequisites?

Yes

Prerequisite:

BIO 26 or equivalent, with grade of C or better

Prerequisites Enforced at Registration?

Yes

Does this course have corequisites?

No

Graded:

Letter

Approval required for enrollment?

No Approval Required

Course Component(s) and Classification(s):Laboratory
Lecture**Laboratory Classification**

CS#16 - Science Laboratory (K-factor=2 WTU per unit)

Laboratory Units

1

Lecture Classification

CS#02 - Lecture/Discussion (K-factor=1WTU per unit)

Lecture Units

2

Is this a paired course?

No

Is this course crosslisted?

No

Can this course be repeated for credit?

No

Can the course be taken for credit more than once during the same term?

No

Description of the Expected Learning Outcomes: Describe outcomes using the following format: "Students will be able to: 1), 2), etc."

- The student will develop a functional background for the beginning student of exercise physiology.
- The student will develop a critical understanding of the role of the major organ systems of the body in the maintenance of physiological balance under various exercise conditions and disease prevention.
- The student will develop a functional understanding of energy production for physical activity.
- The student will develop a functional understanding of nutrition and physical activity.
- The student will develop a functional understanding of exercise and sport training and functional capacity and cite critical observations to apply to individual training requirements.
- The student will develop a functional understanding of environmental factors of physical activity and cite the underlying assumptions and limitations in regard to physical performance.
- The student will develop a functional understanding of body composition and weight control.
- The student will develop an ability to identify and describe exercise programs appropriate for a large variety of goals and objectives; aging, athletic performance, health and well-being, weight loss, self-application and public application.

Assessment Strategies: A description of the assessment strategies (e.g., portfolios, examinations, performances, pre-and post-tests, conferences with students, student papers) which will be used by the instructor to determine the extent to which students have achieved the learning outcomes noted above.**Course Grading and Methods of Evaluation**

- Midterm #1 100 points
 - Midterm #2 100 points
 - Analysis of Research Article 100 points
 - Comprehensive Final 200 points
 - 10 Laboratories 500 points (50 points Each)
- 1000

Is this course required in a degree program (major, minor, graduate degree, certificate?)

Yes

Has a corresponding Program Change been submitted to Workflow?

No

Identify the program(s) in which this course is required:

Programs:

- BS in Kinesiology (Physical Education Teacher Education)
- BS in Kinesiology (Athletic Administration)
- BS in Kinesiology (Athletic Care)
- BS in Kinesiology (Athletic Coaching Education)
- BS in Kinesiology (Physical Activity and Wellness)

Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer)?

No

Will there be any departments affected by this proposed course?

No

I/we as the author(s) of this course proposal agree to provide a new or updated accessibility checklist to the Dean's office prior to the semester when this course is taught utilizing the changes proposed here.

I/we agree

University Learning Goals

Undergraduate Learning Goals:

- Competence in the disciplines
- Knowledge of human cultures and the physical and natural world
- Integrative learning
- Intellectual and practical skills

Is this course required as part of a teaching credential program, a single subject, or multiple subject waiver program (e.g., Liberal Studies, Biology) or other school personnel preparation program (e.g., School of Nursing)?

No

GE Course and GE Goal(s)

Is this a General Education (GE) course or is it being considered for GE?

Yes

In which GE area(s) does this apply?

- B3. Lab Component
- B5. Further Studies in Physical Science, Life Forms and Quantitative Reasoning (Upper Division Only)

Which GE objective(s) does this course satisfy?

- Use mathematical ideas to accomplish a variety of tasks.
- Gain a general understanding of current theory, concepts, knowledge, and scientific methods pertaining to the nature of the physical universe, ecosystems, and life on this planet.

Attach Course Syllabus with Detailed Outline of Weekly Topics:

KINS 150 Syllabus Spring 2019.docx

Syllabi must include: GE area outcomes listed verbatim; catalog description of the course; prerequisites, if any; student learning objectives; assignments; texts; reading lists; materials; grading system; exams and other methods of evaluation.

Will more than one section of this course be offered?

Yes

Provide a description of what would be considered common to all sections and what might typically vary between sections:

All content is common to all sections including lecture content, textbook, syllabus, laboratory activities, and assessment rubrics. The only variation would be individualized instructor curriculum delivery style.

Please write a statement indicating the means and methods for evaluating the extent to which the objectives of the GE Area(s) and any writing requirements are met for all course sections:

The means and methods for evaluating the objectives of Area B3, B5 GE are through two midterm, one final examination, a peer reviewed research paper analysis, and weekly laboratory activities. Each method includes application of physiology of various organ

systems to specific exercise and sport training methodologies, to improve performance, health, wellness, and longevity. Each uses a means of mathematically deriving results from data to draw conclusions regarding exercise sport performance, health, and wellness, and evaluating competency and understanding by formally writing conclusive application and verbally demonstrating analysis and problem solving.

What steps does the department plan to take to ensure that instructors comply with the respective category criteria and who is responsible?

Each instructor is counseled by faculty members of the program committee to standardize the syllabus, content, and laboratory activities.

General Education Details - Area B3: Lab Component

Section 1.

Indicate in written statements how the course meets the following criteria for Category B3. Relate the statements to the course syllabus and outline. Be as succinct as possible.

General criteria:

Involves at least two hours per week in the lab

This course involves a 2 1/2 hour lab each week.

Emphasizes general principles and concepts having a broad range of application and is not restricted to specialized topics.

Content emphasizes application to a broad range of exercise, physical fitness, and sport performance scenarios while presenting additional broad ranges of emphasis of application to self-improvement, older individuals for improved function within activities of daily living and physical fitness, potential clients of all ages in the area of exercise leadership, physical fitness, and sport, as well as in a school setting working with children and teens.

Introduces students to one or more of the disciplines whose purpose is to acquire knowledge of the physical universe and/or living systems and life forms.

Introduces students to the disciplines of physiology within the context of exercise and physical fitness, anatomy and cellular level adaptations to anatomy and physiology, and the use of mathematical derivation of results from raw data to define and quantify physical and physiological parameters.

Develops an appreciation of the methodologies of science and the limitations of scientific inquiry.

This course develops the concept of using quantitative data collection and mathematical data manipulation to solve problems and analyze and draw conclusions. Data is collected, confounding factors limiting validity and reliability are identified and discussed, results are derived, conclusions are drawn within the identified limitations, and applications for self and a variety of populations are discovered. The methodologies of science and the limitation of scientific inquiry is repeated in each 2.5 hour laboratory experience each week and is assessed within a formal laboratory write up including data, results, discussion of reliability and validity, conclusions, and application.

This course includes a formal writing component in which the student must read, analyze, and interpret a professionally peer reviewed published scientific research study, synthesize the major points of the study and offer a critical analysis.

Specific criteria:

A student will be able to use their senses and scientific instruments to gather, organize, and display empirical data.

With the use of expired gas analysis, oxygen uptake capabilities are discovered. The derivation of inspired versus expired oxygen is explained regarding cell respiration and the physiological changes with exercise. This data is then reviewed regarding individual variation and variables that may confound the data.

A student will be able to identify patterns in data and use these to hypothesize underlying relationships.

Personal data is collected and compared and plotted against normative data. Personal data is also derived from normative data using correlation graphing and other linear relationships. The experience of interpreting tables and graphs is also experienced in the writing component of research analysis. Using a semester long period of personal data collection of physical fitness, body composition, and nutrition elements are used to determine personal fitness levels, areas of excellence, and areas for need of improvement. These conclusions are used to construct a thorough exercise and nutrition plan for optimal health, disease prevention, and personal performance.

A student will be able to explain and apply scientific techniques for coping with complexity and variability in the natural world.

Core ideas are explained and applied through the direct measurement of a large variety of personal data of organ system function such as muscle response, heart rate response, and oxygen uptake capabilities in regard to a variety of forms of exercise. From this, various means of improvement and reasons and techniques to scrutinize the data are taught. Confounding factors and data ambiguities are discussed and considered to determine how valid or reliable the derived conclusion may be.

Includes a writing component described on course syllabus

1) If course is lower division, formal and/or informal writing assignments encouraging students to think through course concepts using at least one of the following: periodic lab reports, exams which include essay questions, periodic formal writing assignments, periodic journals, reading logs, other. Writing in lower division courses need not be graded, but must, at a minimum, be evaluated for clarity and proper handling of terms, phrases, and concepts related to the course.

2) If course is upper division, a minimum of 1500 words of formal, graded writing. [Preferably there should be more than one formal writing assignment and each writing assignment (e.g. periodic lab reports, exams which include essay questions, a research/term paper etc.) should be due in stages throughout the semester to allow the writer to revise after receiving feedback from the instructor. Include an indication of how writing is to be evaluated and entered into course grade determination.]

Formal writing assignments requiring critical thinking of course concepts includes a formal writing component in which the student must read, analyze, and interpret a professionally published scientific research study, synthesize the major points of the study and offer a critical analysis, complete weekly laboratory reports with questions and answers with a conclusive essay form summary, and two midterm examinations and one final conclusive examination with essay style questions in each.

Section 2.

If you would like, you may provide further information that might help the G.E. Course Review Committee understand how this course meets these criteria and/or the G.E. Program Objectives found in the CSUS Policy Manual, General Education Program, Section I.B.

Area B5 and Area B3 General Education

A. For physical science and life forms courses: This course develops the understanding of human organ and cellular systems which fulfills foundations of living systems.

B. For quantitative reasoning: This course develops the concept of using quantitative data collection and mathematical data manipulation to solve problems and analyze and draw conclusions.

C. Writing component: This course includes a formal writing component in which the student must read, analyze, and interpret a professionally published scientific research study, synthesize the major points of the study and offer a critical analysis. This course also requires weekly written laboratory reports with questions and answers with a conclusive essay form summary. This course also includes two midterm examinations and one final conclusive examination with essay style questions in each.

General Education Details - Area B5: Further Studies in Physical Science, Life Forms and Quantitative Reasoning

Section 1.

Indicate in written statements how the course meets the following criteria for Category B5. Relate the statements to the course syllabus and outline. Be as succinct as possible.

Course type:

Quantitative Reasoning
Physical Science or Life Forms

For courses in physical science or life forms:

Develops an understanding of the principles underlying and interrelating natural phenomena including the foundations of our knowledge of living systems.

Sports physiology with special emphasis on studying the various systems in the body that are involved in work, exercise and sport. Training programs to improve these systems and their responses will be discussed in a wide variety of settings including exercise for health, fitness, recreation, and sports competition. The knowledge of living systems is explored through the concepts of bioenergetics and metabolism; fuel, food, performance, and disease prevention; through the interaction of the brain, heart, lungs, vascular, and muscles to move efficiently, and optimally throughout life.

Introduces students to one or more of the disciplines whose purpose is to acquire knowledge of the physical universe and/or living systems and life forms.

This course introduces energy through the discipline of physics and thermodynamics, how thermodynamics relates to bioenergetics and metabolism in relation to wholesome food, and ultimately to the biological disciplines of human physiology reacting to challenging environments of physical function.

Develops an appreciation of the methodologies of science and the limitations of scientific inquiry.

This course develops the concept of data collection methodologies, human subject variability and individuality, and confounding factors limiting validity and reliability of data are identified and discussed, results are derived, conclusions are drawn within the identified limitations, and applications for self and a variety of populations are discovered. The methodologies of science and the limitation of scientific inquiry is repeated in each 2.5 hour laboratory experience and is assessed within a formal laboratory write up including data, results, discussion of reliability and validity, conclusions, and application.

For courses in quantitative reasoning:

Develops basic mathematical or logical concepts, quantitative reasoning skills, and has general applicability in solving problems.

This course develops the concept of using quantitative data collection and mathematical data manipulation to solve problems and analyze and draw conclusions. Data is analyzed and compared with normative data, analyzed and compared to historical correlations with various physiological responses to workloads, heart rates, oxygen utilizations, power outputs, and more. Interpretations are derived from data collected, confounding factor limiting validity and reliability are identified and discussed, results are derived, conclusions are drawn within the identified limitations, and applications for self and a variety of populations are discovered. The methodologies of science and the limitation of scientific inquiry is repeated in each 2.5 hour laboratory experience each week and is assessed within a formal laboratory write up including data, results, discussion of reliability and validity, conclusions, and application.

Develops computational skills or competence in the analysis of arguments.

The methodologies of science and the limitation of scientific inquiry is repeated in each 2.5 hour laboratory experience each week and is assessed within a formal laboratory write up including data, results, discussion of reliability and validity, conclusions, and application.

Please Note: Courses listed in this category:

- 1) Need not be introductory courses and need not be as broad in scope as courses included in B1, B2, B3 or B4 i.e.; they may deal with a specialized topic.
- 2) These courses may have prerequisites or build on or apply concepts and knowledge covered in Areas B1, B2 and B4. For math courses, there must be an intermediate algebra prerequisite.

Addresses the specific GE student learning outcomes for area B5. A student should be able to do one or more of the following:

Cite critical observations, underlying assumptions and limitations to explain and apply important ideas and models in one or more of the following: physical science, life science, mathematics, or computer science.

The model from which critical observation applies is within the major body organ systems, the major function of each, and how each may adapt and change to varied stimuli. Assumptions and limitations are explored within the context of cellular response to nutrition and cellular stimulation to a variety of forms of exercise; strength/resistance, cardiovascular endurance, and musculoskeletal flexibility. Upon this basic foundation important ideas relating to cellular overload, specific stimulation doses and modalities are discovered.

Recognize evidence-based conclusions and form reasoned opinions about science-related matters of personal, public and ethical concern.

The student will develop an ability to identify and describe exercise programs appropriate for a large variety of goals and objectives; aging, athletic performance, health and well-being, weight loss, self-application and public application. The student will be able to understand how to make evidence based conclusions regarding exercise dose, modalities, and progression predictions using the exercise science conclusions regarding individual needs and physiological and psychological differences.

Discuss historical or philosophical perspectives pertaining to the practice of science or mathematics.

An historical and philosophical perspective is achieved by comparisons and contrasts between data collection techniques, population specific data, and the principle of individuality and exercise. The student develops the ability to understand the evolution of exercise physiological principles and the present day means of application among and between diverse populations.

Includes a writing component described on course syllabus

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Reviewer Comments:

Kisun Nam (knam) (Tue, 07 May 2019 23:21:50 GMT):Rollback: Committee approved the form with pending changes. Please refer to the discussion during meeting. Committee members from the department will provide the detailed changes to the chair/author. Once re-submitted, the chair may approve the proposal immediately.

Key: 3043