BOARD OF TRUSTEES OF THE NEBRASKA STATE COLLEGES

ITEMS FOR DISCUSSION AND ACTION\ACADEMIC AND PERSONNEL

ACTION:

Approve Addition of Exercise Science Option within Health, Physical Education and Recreation Major and Tactical Strength and Conditioning Minor for Peru State College

Per Policy 4200, which requires all new academic programs to be submitted to the Board for approval, Peru State requests approval of the Exercise Science option for the Health, Physical Education and Recreation program and the undergraduate minor in Tactical Strength and Conditioning, beginning Fall 2023. In addition to these new HPER programs, the College is changing the title of the Kinesiology option to Strength and Conditioning and changing the title of the Kinesiology minor to Exercise Science to reflect current trends in the discipline.

The System Office and Peru State College recommend approval of the Addition of Exercise Option and Tactical Strength & Conditioning Minor for Peru State College.

ATTACHMENTS:

- PSC Exercise Science Option (PDF)
- PSC Tactical Strength Conditioning Minor (PDF)

Peru State College

Proposal to Add Exercise Science option to the Health, Physical Education and Recreation (HPER) major

1. Descriptive Information

- A. <u>Name of Institution</u>: Peru State College
- B. <u>Name of Program</u>: Exercise Science option
- C. Degrees/credentials to be awarded graduates of the program: BS or BA
- D. Other programs offered in this field by the institution:

Health, Physical Education & Recreation Major includes the following existing offerings:

- ✓ Kinesiology option (changing title to Strength and Conditioning option)
- ✓ Health and Physical Education field endorsement
- ✓ Kinesiology minor (changing title to Exercise Science minor)
- E. <u>CIP code</u>: 31.0505
- F. Administrative units for the program: School of Education
- G. <u>Proposed delivery site(s) and type(s) of delivery, if applicable</u>: Campus
- H. Proposed date (term/year) the program will be initiated: Fall 2023
- I. <u>Description of Program:</u>

The Exercise Science option focuses on the anatomy, physiology, biochemistry, and biophysics of human movement with direct application to the fields of physical therapy, occupational therapy, athletic training, and post-undergraduate clinical research and employment.

The proposed program is similar to the existing Kinesiology program but it includes recommended courses as set forth by the admissions requirements of typical post-graduate programs. These courses include general biology, anatomy, physiology, chemistry I, and physics I.

Outcomes:

- 1. Students will gain an understanding of human movement as it relates to exercise science.
 - a. The student will be able to effectively demonstrate fundamental human movement principles to a variety of contexts and populations.

- b. The student will be able to demonstrate an applied understanding of the form and function of the human body.
- c. The student will be able to demonstrate an understanding of the anatomical, physiological, and biomechanical principles related to exercise science including prevention, diagnosis, and treatment of injuries.
- 2. Students will develop the skills necessary to perform research as it relates to exercise science.
 - a. The student will be able to demonstrate an ability to generate a testable hypothesis.
 - b. The student will be able to demonstrate an ability to interpret data, draw conclusions, and/or refine hypotheses based on data.
 - c. The student will be able to demonstrate an ability to communicate research findings in a variety of formats.
- 3. Students will be able to implement effective coaching strategies that can be used with clients.

Exercise Science option requirements:

HPER Core (16 credits)			
HPER 219	Techniques of the Olympic Lift	1	
HPER 222	Structural Kinesiology	3	
HPER 310	Psychology of Sports and Physical Activities	3	
HPER 325	Prevention and Care of Sports Injuries	3	
HPER 430	Sports Nutrition	3	
HPER 360	Physiology of Exercise	3	
Exercise Science Option (41 credits)			
BIOL 130	General Biology	4	
BIOL 210	Anatomy	4	
BIOL 312	Physiology	4	
CHEM 101	General Chemistry I	4	
HPER 199	First Year Seminar in Kinesiology	2	
HPER 290	Research Opportunities in Kinesiology	3	
HPER 419	Neuromechanics of Human Movement	3	
HPER 420	Mechanical Kinesiology	3	
HPER 433	Applied Exercise Science	3	
HPER 434	Senior Seminar in Kinesiology	3	
HPER 441	HPER Internship	3	
PHYS 201	General Physics I	5	
Total		57	

Courses (all but one of the courses currently offered)

BIOL 130 General Biology

An integrated course designed to introduce the basic patterns and processes of biology and the scientific method. The course builds a conceptual understanding of major biological problems and opportunities and the role the biological sciences play in understanding and solving these problems and exploiting opportunities. Major topics include: medicine, epidemiology and disease; applied evolution and ecology; genetic engineering, cloning and biotechnology; population growth and the role of demographics in energy and economic development, and other relevant current topics as appropriate. This is a course for

non-majors and cannot be used for elective credit in the Natural Science major. Both lecture and laboratory are required for this course.

BIOL 210 Anatomy

A comprehensive examination of the cell biology, histology, and organ systems of humans. The course is designed for students in allied health and pre-nursing. Both lecture and laboratory are required for this course.

BIOL 312 Physiology

An examination of the functions and interactions of the organ systems of the human body with an emphasis on the body's homeostatic control mechanisms. Both lecture and laboratory are required for this course.

HPER 219 Techniques of the Olympic Lift

Techniques of the Olympic Lifts (Power Clean & Snatch) provides undergraduate students with an introduction to the philosophy of ground-based, multi-joint, multi-muscle movements designed to produce athletic power (force x distance/time) that can easily be transferred into athletic competition. Emphasis will be place on mastery of technique and the ability to instruct others.

HPER 222 Structural Kinesiology

This course will provide the student with an understanding of the anatomical and mechanical fundamentals of human motion. The student will learn a systematic approach to the analysis of human motion and will be able to apply anatomical and mechanical analysis to the learning and improvement of a broad spectrum of movement activities.

HPER 310 Psychology of Sports and Physical Activities

This course examines the place of psychology in physical education and sports. It includes personality, attention and arousal, anxiety and intervention, theories of motivation, and social psychology of sports aggression, audience effects, team cohesion, and leadership in sports.

HPER 325 Prevention and Care of Sports Injuries

This course examines the nature and cause of injuries related to the physical activities of children and athletes.

HPER 360 Physiology of Exercise

This course will provide students with a working understanding of how exercise affects the different systems of the body.

HPER 430 Sports Nutrition (revised course)

This course provides an overview of the role nutrition plays in supporting and improving human performance. Emphasis will be placed on applying evidence-based strategies and recommendations to realistic case studies as well as on preparing students to sit for certification exams within the exercise sciences that include nutrition as a component. Macro and micro-nutrients, nutrition through the life span, the role of nutrition on health, food safety, and effects on physical activity will also be examined. In addition, evaluation of current nutritional issues, controversies, and consumer decisions will be analyzed.

HPER 199 First Year Seminar in Kinesiology

This course introduces the discipline of Kinesiology to beginning undergraduate students with an emphasis on Exercise Physiology, Neuromechanics, and Mechanical Kinesiology.

HPER 290 Research Opportunities in Kinesiology

The purpose of this course is to provide students with a cross-curricular understanding of kinesiology, statistics, and appropriate statistical computer-based applications (i.e. Excel) in preparation of upper-level

undergraduate coursework. This will be accomplished through exposure to experimental research methods and intermediate statistical procedures commonly found in kinesiological research. Additionally, students will be introduced to current trends and research topics couple with laboratory techniques in the areas of Exercise Physiology, Neuromechanics, and Mechanical Kinesiology.

HPER 419 Neuromechanics of Human Movement

The Neuromechanics of Human Movement focuses on how the human nervous and musculoskeletal systems interact to produce coordinated locomotion. Specifically, the course seeks to understand the role of corticospinal plasticity in relation to skill training and strength development.

HPER 420 Mechanical Kinesiology

This course is designed to introduce students to concepts of mechanics as they apply to human movement, particularly those pertaining to exercise, sport, and physical activity. The student should gain an understanding of the mechanical, neurological, and anatomical principles that govern human motion and develop the ability to link the structure of the human body with its function from a mechanical perspective. At the completion of this course it is desired that each student be able to: 1) describe motion with precise, well-defined mechanical and anatomical terminology; 2) understand and quantify linear and angular characteristics of motion; 3) understand the quantitative relationships between angular and linear motion characteristics of a rotating body; 4) understand and quantify the cause and effect relationship between force and linear and angular motion; 5) understand the mechanics of connective tissue and injury; and 6) understand the kinetic and kinematic assessment of gait analysis.

HPER 433 Applied Exercise Science

This course is designed to further the understanding of exercise physiology, structural kinesiology, biomechanics and motor behavior. The classroom, laboratory, and clinical experiences of this course are intended to provide the student with an opportunity to discuss, observe and become aware of the acute and chronic responses of the human body to physical activity. Instruction is directed toward understanding the research methods used to evaluate and assess the biology of human movement as it pertains to exercise science. Students will be required to complete a service-learning project in order to adequately demonstrate a full understanding of subject matter.

HPER 434 Senior Seminar in Kinesiology (new course)

This course serves as the culminating experience for the Exercise Science/Strength & Conditioning major and provides an opportunity for the student to demonstrate the depth and breadth of their knowledge via a research project. This research involvement typically is a continuation of ideas formulated throughout the undergraduate education and should involve a literature review of the research topic, data collection, analysis, and interpretation. The literature review, data, and interpretation of the research findings will be incorporated into a final written report and/or presentation, which will be assessed by the faculty mentor. The faculty mentor will determine specific details of the research experience.

HPER 441 HPER Internship

This course is designed for students to explore and gain work experience related to their major and anticipated career goals. Students may enroll for 1-12 hours of graded credit. A minimum of forty-five hours of work experience will be required for each hour of credit per semester. The student will complete necessary paperwork with the employer and the Internship Supervisor. No more than 12 credit hours of internship credit may be counted towards graduation requirements.

PHYS 201 General Physics I

The topics of mechanics, sound, and heat are included in this mathematically-based physics course. This class includes required lectures, recitation, and laboratory components.

2. Centrality to Role and Mission

Peru State College has a long history of providing instruction in exercise science-related fields. A large number of students currently major in Kinesiology, which has always been one of the most popular majors for students. Graduates have gone on to professional school in a number of areas such as physical therapy, occupational therapy, athletic training, and chiropractic. With the exception of one new course, this program uses existing courses and provides a clearer pathway for students interested in these career options.

3. Evidence of Need and Demand

A. <u>Need for the program:</u>

As of the Fall of 2022, roughly 10% of students enrolled at Peru State College (PSC) are Kinesiology majors. Of these students, a variety have expressed an interest in careers including physical therapy (PT), occupational therapy (OT), and athletic training (AT) and Chiropractic medicine. Recent accreditation changes by the National Strength and Conditioning Association (NSCA) dictate those hoping to sit for the Certified Strength & Conditioning Specialist (CSCS) exam must graduate from an accredited program by the year 2030, and that the name of the program must contain the words "Strength and Conditioning." This change could serve to be detrimental to those students seeking employment in fields such as PT, OT, or AT. According to the 2016 - 2017 Physical Therapist Centralized Application Service (PTCAS) Applicant Data Report, Exercise Science has the highest percentage of both applicants and accepted applicants in the PTCAS with 23.49% of applicants and 23.98% of accepted applicants, respectively. Kinesiology is ranked the second highest with 15.48% of applicants and 14.65% of applicants accepted, respectively. This program responds to that need by providing an option that is more focused on preparing students for graduate school than for careers in strength and conditioning.

B. <u>Demand for the Program:</u>

This program will meet the needs of many current students and would provide an efficient and clear pathway for them to graduate school. The current program's title, Kinesiology, is also not as attractive to some students. Data from the National Student Clearinghouse suggests a number of students do not attend Peru State College, but go elsewhere for Exercise Science programs. Job growth for physical therapists, occupational therapists, chiropractors, and athletic trainers is expected to be faster than average, according to the Bureau of Labor Statistics. There will continue to be job openings in these fields due to retirements or transfers to other occupations, according to the BLS. Students can also go on to careers working in wellness centers, community recreation centers, or on college and university campuses.

4. Adequacy of Resources

A. Faculty and Staff Resources:

All but one of the courses are currently being offered. Due to changes in the core classes and course rotation, the new course will be taught as part of existing load.

B. Physical Facilities:

Peru State currently has the facilities necessary for the program, including the Human Performance Lab. The addition of new sports facilities at the College will increase the space for the program.

C. Instructional Equipment and Informational Resources:

Equipment exists as part of the Human Performance Lab to support the program. Current equipment includes a metabolic cart for the testing of VO2 max, electromyograph equipment, a Polar tower capable of body composition testing via skinfold analysis, velocity-based training analyzer, and DASHR electronic timer equipment. Motion analysis software is also available free of charge via Kinovea. Funding is available through the instructional resources fund to support future purchases that may be necessary.

D. Budget Projections for the first five years of program:

Since all but one of the courses are already being offered, there will be no new expenses for this program.

5. Avoidance of Unnecessary Duplication

Peru State has long had a major in Kinesiology. This new option provides a clearer pathway for students who wish to prepare for professional school. As such, it does not necessarily constitute an additional duplication of programs offered in the state. There are other Exercise Science programs in the state. Some require far more science-related courses than the current proposal while others do not specifically include all the courses that are typically required as entrance requirements for professional school.

6. Consistency with the Comprehensive Statewide Plan for Postsecondary Education

Creating and implementing the Exercise Science option at Peru State College is consistent with the Coordinating Commission for Postsecondary Education's Comprehensive Statewide Plan for Postsecondary Education and helps the state advance three major goals: meeting the educational needs of students, meeting the needs of the state, and meeting the needs through exemplary institutions.

This program meets the educational needs of students by providing instruction in areas of interest for students. The program also helps to meet the needs of the state by creating a knowledgeable, trained and skilled workforce in exercise science-related fields (physical therapy, occupational therapy, athletic training, and chiropractic medicine). As evidenced by the high demand for positions in this field, this program will prepare students to fill these positions, serving in critical workforce areas and preparing the state to meet the needs to support the industries.

Finally, the addition of the Exercise Science option will help Peru State College fulfill its role in an exemplary manner. The inclusion of the option within HPER provides a unique program that will lead to a variety of careers. Given that the option can be created with no additional new resources, it is an efficient way to provide additional access to students served by the mission of the College.

Peru State College

Proposal to Add Tactical Strength and Conditioning Minor

1. Descriptive Information

- A. <u>Name of Institution</u>: Peru State College
- B. <u>Name of Program</u>: Tactical Strength and Conditioning Minor
- C. <u>Degrees/credentials to be awarded graduates of the program</u>: Minor
- D. Other programs offered in this field by the institution:

Health, Physical Education & Recreation Major includes the following existing offerings:

- ✓ Kinesiology option (changing title to Strength and Conditioning option)
- ✓ Health and Physical Education field endorsement
- ✓ Kinesiology minor (changing title to Exercise Science minor)
- E. <u>CIP code</u>: 31.0505
- F. <u>Administrative units for the program</u>: School of Education
- G. <u>Proposed delivery site(s) and type(s) of delivery, if applicable</u>: Campus
- H. Proposed date (term/year) the program will be initiated: Fall 2023
- I. <u>Description of Program:</u>

The Tactical Strength & Conditioning minor provides undergraduates with foundational knowledge, skills, and abilities to become leaders in tactical strength, conditioning, and injury prevention. The curriculum covers content focused on improving the health, fitness and resiliency of emergency responders (i.e., tactical athletes).

Outcomes:

- Students will have content knowledge in the criminal justice field as it pertains to strength & conditioning and the tactical athlete.
- Students will be able to explain the major components of the criminal justice system.
- The student will be able to effectively demonstrate an understanding of the structure and function of the human body and how the tactical athlete responds to physical activity.
- The student will effectively demonstrate an understanding of sport nutrition with regards to tactical performance.
- Students will be able to present research on criminal justice topics as they pertain to strength & conditioning of the tactical athlete.
- Students will be able to evaluate a comprehensive analysis of the strength and conditioning required for the tactical athlete and modify accordingly.

• Students will be able to demonstrate basic knowledge of information technology as applied to strength and conditioning research and practice.

Required Courses			
HPER 219	Techniques of the Olympic Lift	1	
HPER 360	Physiology of Exercise	3	
HPER 365	Tactical Strength and Conditioning	3	
HPER 430	Sports Nutrition	3	
CJUS 110	Survey of Criminal Justice	3	
CJUS 230	Policing	3	
Elective: Choose one course from the following.			
BUS 201	Organizational Communication	3	
BUS 373	Organizational Behavior	3	
BUS 493	Team Design and Performance	3	
CJUS 190	Criminal Law	3	
CJUS 401	Homeland Security	3	
CJUS 450	Criminalistics	3	
Minor Total	19		

Tactical Strength & Conditioning Minor Requirements

Courses: One new course, others existing

HPER 219 Techniques of the Olympic Lift

Techniques of the Olympic Lifts (Power Clean & Snatch) provides undergraduate students with an introduction to the philosophy of ground-based, multi-joint, multi-muscle movements designed to produce athletic power (force x distance/time) that can easily be transferred into athletic competition. Emphasis will be place on mastery of technique and the ability to instruct others.

HPER 360 Physiology of Exercise

This course will provide students with a working understanding of how exercise affects the different systems of the body.

HPER 365 Tactical Strength and Conditioning (new course)

This course examines fundamental concepts in bioenergetics, biomechanics, cardiopulmonary responses, and skeletal muscle function & adaptation. Includes evidence-based program design and practical skills necessary for success in fire and rescue, law enforcement, and military careers. Content will prepare students to sit for the NSCA Tactical Strength and Conditioning Facilitator certification.

HPER 430 Sports Nutrition (revised course)

This course provides an overview of the role nutrition plays in supporting and improving human performance. Emphasis will be placed on applying evidence-based strategies and recommendations to realistic case studies as well as on preparing students to sit for certification exams within the exercise sciences that include nutrition as a component. Macro and micro nutrients, nutrition through the life span, the role of nutrition on health, food safety, and effects on physical activity will also be examined. In addition, evaluation of current nutritional issues, controversies, and consumer decisions will be analyzed.

CJUS 110 Survey of Criminal Justice

This course introduces students to general criminal justice concepts and knowledge about the relationships of crime and criminal behavior. The purpose, role, and interrelationships of the police, other law enforcement officials, the courts and judiciary, corrections, and parole systems are discussed.

CJUS 230 Policing

This course covers the major roles of the police in American society. The course investigates the origins of policing and law enforcement, police organization, the functions of police in society, and the polices' relationships to the various components of the criminal justice system. Issues confronting police administration are discussed.

BUS 201 Organizational Communication

Students study communication foundations, the writing process, and communicating through letters, memorandums, and E-mail messages. The culminating activities permit the students to understand research methods, to design effective organizational communication documents including a resume and cover letter, and to design and deliver a team and individual presentation.

BUS 373 Organizational Behavior

This course presents the foundations of the history, theory, and applications of organizational behavior in the areas of personality, stress, motivation, job design, goal setting, learning theory, behavior modification, group behavior, power, leadership, organizational structure, decision-making, and control.

BUS 493 Team Design and Performance

This course examines the design and performance of work and decisional teams including team composition, authority, communication, roles, support, and leadership. This course will prepare the student to be a successful team member and leader by exploring team evolution, self-management, and conflict resolution. This course is recommended for juniors and seniors in any degree program.

CJUS 190 Criminal Law

This course will focus on the concepts of substantive criminal law as they pertain to elements of criminal acts. Special focus will be assigned to basic legal concepts such as assigning punishment, voluntary criminal acts and omissions, explaining the nexus between *mens rea* and *actus reus*. Topics will also include theories of causation, homicide, theft, affirmative defenses and attempted crimes. Further, contemporary criminal law issues confronting law enforcement officials from crime prevention to court appearance are considered. Special attention will also be given to evidentiary standards relating to rules of relevancy, character evidence, and hearsay.

CJUS 401 Homeland Security

This course is designed to provide students with an understanding of Homeland Security, incident management, terrorism and counter terrorism as impacting the United States.

2. Centrality to Role and Mission

Tactical Strength & Conditioning pertains to firefighters, police officers, emergency medical personnel, and soldiers in all branches of the military. These individuals are often referred to as Tactical Athletes (TA) and each role has unique physical requirements that demand high levels of fitness as well as the ability to perform strenuous tasks with little to no warning. For all Tactical Athletes fitness testing and injury prevention are inherently part of the culture.

The proposed minor is an additional asset with regards to the current agreement between the state, Peru State College, and Tecumseh Correctional Facility. This minor further provides undergraduate students the educational experience that will strengthen and enrich communities, Nebraska, and the world. The addition of the Tactical Strength & Conditioning minor provides additional opportunities for Peru State College students to strengthen their resumes as they pursue employment past graduation.

3. Evidence of Need and Demand

A. <u>Need for the program:</u>

The United States Bureau of Labor reports average to above average growth of firefighters, police, and military occupations over the next decade. According to data from 2015 there are 1.1 million (345,000 career, 815,000 volunteer) firefighters, over 800,000 police officers, and more than 1.2 million active duty military in the US. This program will help support students who wish to go into these fields.

Also, a 2022 salary survey conducted by the National Strength and Conditioning Association revealed that the Tactical/Government Employee Coaches working in the military make on average \$15,000 more per year than contractor/other coaches in the same setting and that tactical salaries, second to only professional sports, remain positioned to attract coaches from other areas of the field. With this minor, students would be prepared to serve in this role.

Fundamentally, this minor will help prepare our students to be strong and mentally healthy as they enter the field as emergency responders.

B. <u>Demand for the Program:</u>

We anticipate that a number of Criminal Justice and HPER students will be interested in this program, particularly those in the Corrections Leadership Program. By offering the minor, students will be encouraged to use elective credits to bolster their knowledge and build their resumes.

4. Adequacy of Resources

A. Faculty and Staff Resources:

All but one of the courses are currently being offered by qualified full-time and adjunct faculty. We anticipate the new course will be taught as part of load or as overload, if needed.

B. Physical Facilities:

Peru State currently has the facilities necessary for the program, including the Human Performance Lab and Criminal Justice engaged learning center, including a training simulator. The addition of new sports facilities at the College will increase the space for the program.

C. Instructional Equipment and Informational Resources:

The Criminal Justice program in the School of Professional Studies recently purchased a number of weighted tactical vests that will be used by the program. Funding is available through the instructional resources fund to support future purchases that may be necessary.

D. Budget Projections for the first five years of program:

Since all but one of the courses are already being offered, there will be no new expenses for this program. There will likely not be additional new revenue since students are taking this minor to fulfill their elective credits. There could be community residents or non-degree seeking student who are incumbent law enforcement officials who wish to take these courses.

5. Avoidance of Unnecessary Duplication

Similar programs do not appear to exist in Nebraska or surrounding states. The University of Kansas offers a course in tactical strength and conditioning.

6. Consistency with the Comprehensive Statewide Plan for Postsecondary Education

The proposal to add a Tactical Strength and Conditioning minor at Peru State College is consistent with the Coordinating Commission for Postsecondary Education's Comprehensive Statewide Plan for Postsecondary Education and helps the state advance three major goals: meeting the educational needs of students, meeting the needs of the state, and meeting the needs through exemplary institutions.

This program meets the educational needs of students by providing a new credential for those students interested in a career in law enforcement, fire safety, or the military. The minor will also prepare students who wish to have a career as a tactical professional. The program also helps to meet the needs of the state. The Corrections Leadership Program at Peru State has contributed dozens of students and thousands of hours of work at the Tecumseh State Correctional Institute. This program will further develop the knowledge and skills of those students. Additionally, the program will be available to local law enforcement personnel to provide necessary training. Additionally, the Tactical Strength and Conditioning minor will strengthen Peru State College. The courses necessary for this minor are already offered at Peru State so there is no additional expense, yet offering this program provides yet another feature for the HPER and Criminal Justice programs to distinguish them from other programs in the state.