490. Independent Study  
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 9 credits in all enrollments for this course.  
R: Approval of department.  
Supervised special projects arranged by an individual student and a faculty member in areas supplementing regular course offerings.

491. Special Topics in Philosophy  
Fall, Spring, Summer. 3 to 4 credits. A student may earn a maximum of 9 credits in all enrollments for this course.  
Special topics supplementing regular course offerings, proposed by faculty on a group study basis.

492. Seminar for Majors  
Fall. Spring. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course.  
P: 10 credits in Philosophy, R: Open only to majors in Philosophy or approval of department.  
Advanced, variable topic seminar for undergraduate majors. Seminar presentations. Substantial paper.

499. Graduate Thesis Research  
Fall, Spring. 3 credits.  
R: Approval of department.  
Individual research project supervised by a faculty member that demonstrates the student's ability to do independent research and submit or present a major paper.

810. Seminar in the History of Philosophy  
Fall. 2 to 4 credits. A student may earn a maximum of 10 credits in all enrollments for this course.  
R: Open only to graduate students in Philosophy or approval of department.  
Major thinkers, themes, periods, or movements in the history of philosophy.

820. Seminar in Continental Philosophy  
Fall of even-numbered years. 2 to 4 credits. A student may earn a maximum of 10 credits in all enrollments for this course.  
R: Open only to graduate students in Philosophy or approval of department.  
Major figures or themes in 19th and 20th century continental philosophy.

830. Seminar in Logic and the Philosophy of Language  
Fall of odd-numbered years. 2 to 4 credits. A student may earn a maximum of 10 credits in all enrollments for this course.  
R: Open only to graduate students in Philosophy or approval of department.  
Selected topics in philosophy of language, philosophical logic, and metalanguage.

840. Seminar in Value Theory  
Spring. 2 to 4 credits. A student may earn a maximum of 10 credits in all enrollments for this course.  
R: Open only to graduate students in Philosophy or approval of department.  
Major figures, themes, or periods in ethics or aesthetics. Topics vary.

850. Seminar in Social and Political Philosophy  
Spring of even-numbered years. 2 to 4 credits. A student may earn a maximum of 10 credits in all enrollments for this course.  
R: Open only to graduate students in Philosophy or approval of department.  
Major figures, themes, or periods in social and political philosophy. Topics vary.

860. Seminar in Metaphysics and Epistemology  
Fall. 2 to 4 credits. A student may earn a maximum of 15 credits in all enrollments for this course.  
R: Open only to graduate students in Philosophy or approval of department.  
Selected topics in metaphysics, epistemology, and philosophy of mind.

870. Seminar in Philosophy of Health Care  
Fall. 2 to 4 credits. A student may earn a maximum of 15 credits in all enrollments for this course.  
R: Open only to graduate students in Philosophy or approval of department.  
Ethical, political, theoretical, and methodological issues in medicine and health care.

880. Seminar in Philosophy of Science  
Spring. 2 to 4 credits. A student may earn a maximum of 10 credits in all enrollments for this course.  
R: Open only to graduate students in Philosophy or approval of department.  
Selected topics in the philosophy of the special sciences, in the metatheory of science, and in the social studies of science.

890. Independent Study  
Fall, Spring, Summer. 1 to 10 credits. A student may earn a maximum of 20 credits in all enrollments for this course.  
R: Approval of department.  
Special projects, directed reading, and research arranged by an individual graduate student and a faculty member in areas supplementing regular course offerings.

904. Practicum in Philosophy of Health Care  
Spring of odd-numbered years. 4 to 8 credits.  
A student may earn a maximum of 12 credits in all enrollments for this course.  
P: PHL 344. R: Open only to doctoral students in Philosophy or approval of department.  
Study of ethical and policy issues in hospital and governmental agency settings.

910. Master's Thesis Research  
Fall, Spring, Summer. 1 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course.  
R: Approval of department.  
Directed research leading to a master's thesis in partial fulfillment of Plan A master's degree requirements.

920. Doctoral Dissertation Research  
Fall, Spring, Summer. 1 to 12 credits. A student may earn a maximum of 50 credits in all enrollments for this course.  
R: Approval of department.

**PHYSICAL EDUCATION AND EXERCISE SCIENCE**  
PES Department of Physical Education and Exercise Science  
College of Education

101. Aquatics  
Fall, Spring, Summer. 1(0-2)  
R: A student may earn a maximum of 8 credits in all enrollments for this course if different activities or the same activities at higher levels are involved. Students are limited to a combined total of 8 credits in PES 101 through PES 108.  
Skill and knowledge development in swimming, diving, lifeguarding, water polo, and sailing.

102. Combative Sports  
Fall, Spring, Summer. 1(0-2)  
R: A student may earn a maximum of 8 credits in all enrollments for this course if different activities or the same activities at higher levels are involved. Students are limited to a combined total of 8 credits in PES 101 through PES 108.  
Skill and knowledge development in martial arts or jujitsu, karate, aikido, and fencing.

103. Conditioning  
Fall, Spring, Summer. 1(0-2)  
R: A student may earn a maximum of 8 credits in all enrollments for this course if different activities or the same activities at higher levels are involved. Students are limited to a combined total of 8 credits in PES 101 through PES 108.  
Knowledge and competency in physical fitness activities that emphasize cardiovascular and muscular training. Separate course sections in activities such as aerobics, exercise physiology, and weight training.

104. Dance  
Fall, Spring, Summer. 1(0-2)  
R: A student may earn a maximum of 8 credits in all enrollments for this course if different activities or the same activities at higher levels are involved. Students are limited to a combined total of 8 credits in PES 101 through PES 108.  
Skill and knowledge development in dance activities. Separate course sections in dance styles such as ballet, modern, jazz, tap, and social.

105. Gymnastics  
Fall, Spring, Summer. 1(0-2)  
R: A student may earn a maximum of 8 credits in all enrollments for this course if different activities or the same activities at higher levels are involved. Students are limited to a combined total of 8 credits in PES 101 through PES 108.  
Skill and knowledge development in gymnastics. Separate course sections in activities such as apparatus, tumbling, and floor exercise.

106. Individual Sports  
Fall, Spring, Summer. 1(0-2)  
R: A student may earn a maximum of 8 credits in all enrollments for this course if different activities or the same activities at higher levels are involved. Students are limited to a combined total of 8 credits in PES 101 through PES 108.  
Skill and knowledge development in individual sports. Separate course sections in activities such as archery, fencing, and tennis.

107. Racquet Sports  
Fall, Spring, Summer. 1(0-2)  
R: A student may earn a maximum of 8 credits in all enrollments for this course if different activities or the same activities at higher levels are involved. Students are limited to a combined total of 8 credits in PES 101 through PES 108.  
Skill and knowledge development in racquet sports. Separate course sections in sports such as badminton, racquetball, and tennis.

108. Team Sports  
Fall, Spring, Summer. 1(0-2)  
R: A student may earn a maximum of 8 credits in all enrollments for this course if different activities or the same activities at higher levels are involved. Students are limited to a combined total of 8 credits in PES 101 through PES 108.  
Skill and knowledge development in team sports. Separate course sections in sports such as basketball, soccer, volleyball.
120. **Personal Health**  
Fall, Spring, Summer. 3(3-0)  
Physical, mental, emotional, social, and spiritual domains of health. Alternative health values and behaviors. Developing healthy lifestyles.

121. **The Healthy Lifestyle**  
Fall, Spring, Summer. 3(2-2)  
Cardiovascular risk factors, lifestyle habits, and aerobic capacities and their relationship to optimal health and longevity. Individual physical activity required as part of the course.

125. **First Aid and Personal Safety**  
Fall, Spring, Summer. 3(3-0)  
Knowledge and skills necessary to plan and conduct small first aid and personal safety exercises. Motor skills, physical fitness, knowledge, and attitudes associated with physical activity.

256. **Physical Growth and Motor Behavior**  
Fall, Spring. 3(3-0)  

300B. **Coaching Sports for Athletes with Disabilities**  
Spring of even-numbered years. 2(2-0) Interdepartmental with Park and Recreation Resources. Rules, strategies, and training. Developing and evaluating players skills. Planning, conducting, and evaluating sport practices. Health and safety concerns.

400. **Principles of Coaching I**  
Fall. 4(4-0)  
R: Not open to freshmen or sophomores. Not open to majors in the Department of Physical Education and Exercise Science. Basic principles of anatomy, biomechanics, and physiology for coaches of competitive sports. Applications to athletes of different ages and abilities.

420. **School Health Education**  
Fall. 3(3-0)  

421. **Advanced Athletic Training**  
Spring. 3(3-0)  

422. **Advanced Rehabilitation of Athletic Injuries**  
Spring of odd-numbered years. 3(3-0)  

445. **Sociocultural Analysis of Physical Activity**  
Fall, Spring. 3(3-0)  
R: Open only to seniors or graduate students. Sociocultural context of and social practices in sport and physical activity.
465. Design and Evaluation of Physical Activity Programs
Fall, Spring, 3(3-0)
R: Open only to seniors and graduate students.
Development and evaluation of programs in physical education and exercise science.

466. Practicum in Adapted Physical Activity
Fall, Spring, Summer, 1 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course.
R: Approval of department.
Supervised teaching of physical activities and/or coaching sports to persons with disabilities and youths at risk.

470. Seminar in Physical Education and Exercise Science (W)
Fall, Spring, 3(3-0)
R: Open only to seniors and graduate students. Completion of Tur 1 writing requirement.
Survey of current issues in physical education, sport, and exercise science.

472. Topics in Physical Education and Exercise Science (MT)
Fall, Spring, Summer, 2 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course.
R: Approval of department.
Survey of current issues in areas such as methodology of exercise, biomechanics, motor behavior, psychosocial aspects of activity, program design and evaluation, athletic training, and coaching.

479. Independent Study
Fall, Spring, Summer, 1 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course.
R: Approval of department.
Supervised individual or group study in various fields of emphasis in physical education and exercise science.

480. Fieldwork
Fall, Spring, Summer, 1 to 4 credits. A student may earn a maximum of 4 credits in all enrollments for this course.
R: Approval of department.
Supervised practice in teaching physical education activities, coaching sports, administering support programs, or conducting research or service activities in physical education and exercise science.

810. Physiology of Physical Activity
Fall, 3(3-0)
Acute and chronic effects of exercise on the various body systems. Program design, issues in exercise physiology.

811. Physiological Evaluation and Exercise Prescription
Fall, 3(0-4)
P: PES 810 or concurrently. Techniques in evaluation of physiological capacity and in exercise prescription for various populations.

812. Cardiovascular, Respiratory, and Metabolic Responses to Exercise
Spring of even-numbered years, 3(3-0)
P: PES 810.
Acute and chronic effects of exercise on cardiovascular, respiratory, and metabolic system functions. Role of these systems in limiting exercise performance.

813. Neuromuscular and Endocrine Responses to Exercise
Spring of odd-numbered years, 3(3-0)
P: PES 810.
Acute and chronic effects of exercise on nervous, muscular, and endocrine system functions. Role of these systems in limiting exercise performance.

830. Biomechanical Analysis of Physical Activity
Fall, 3(2-2) Interdepartmental with Biomechanics.
Kinematic analysis of mechanical and anatomical characteristics in physical activity and sport skills.

831. Advanced Biomechanics of Physical Activity
Spring of even-numbered years, 3(2-2) Interdepartmental with Biomechanics.
P: PES 830.
Kinetic analyses of the performance of physical activity and sport.

840. Psychosocial Aspects of Physical Activity
Fall, 3(3-0)
Social psychology of sport and physical activity.

845. Socio-cultural Practices in Sport
Spring of odd-numbered years, 3(3-0)
Critical, conflict, and feminist theories on dominant ideologies and social practices in sport.

851. Curriculum and Instruction in Physical Activity Programs
Spring of even-numbered years, 3(3-0)
P: PES 450.
Curriculum theory and models in physical education and exercise science. Interaction of curriculum and instructional decision making in physical education and exercise science.

862. Evaluation of Physical Activity Programs
Spring of odd-numbered years, 3(3-0)
P: PES 450.
Skills and knowledge necessary to design, implement, analyze, interpret, and report program evaluations in physical education and exercise science.

863. Athletic Administration in Higher Education
Fall, 3(3-0)
Administrative theory, structure, and budget. Facilities, equipment, and marketing. Legal, medical, and safety aspects.

869. Growth and Motor Behavior
Fall, 3(3-0)

861. Growth, Maturation, and Physical Activity
Spring of even-numbered years, 3(3-0)
P: PES 880.

882. Motor Skill Learning
Spring of odd-numbered years, 3(3-0)
P: PES 880.

885. Curriculum and Instruction in Adapted Physical Education
Fall, 3(3-0) Interdepartmental with Education and Exercise Science.
Design of curricula and implementation of instruction in physical education for students with disabilities.