EXERCISE PHYSIOLOGY (EXPH)

EXPH 50612 EXERCISE LEADERSHIP FOR THE OLDER ADULT 3 Credit Hours
(Cross-listed with EXSC 40612) Designed to provide the students with a knowledge base in exercise leadership in the senior population and includes special populations. Students participate in the leading supervision and evaluation of the participant within the exercise program. They also assist in the collection of functional fitness data.
Prerequisite: Graduate standing.
Schedule Type: Combined Lecture and Lab
Contact Hours: 2 lecture, 2 lab
Grade Mode: Standard Letter

EXPH 51000 EXERCISE IMPLEMENTATION: AN EXERCISE INTERVENTION PROGRAM 1-3 Credit Hours
(Repeatable for credit) Students will participate in leading, supervising and developing plans for individuals who want to reduce cardiovascular risk factors through structured exercise. Prerequisite: EXPH 55080 and graduate standing.
Schedule Type: Laboratory
Contact Hours: 3-9 lab
Grade Mode: Standard Letter

EXPH 53093 VARIABLE TITLE WORKSHOP IN EXERCISE SCIENCE AND EXERCISE PHYSIOLOGY 1-3 Credit Hours
(Repeatable for credit) (Cross-listed with EXSC 43093) Workshop in exercise science or physiology, topics vary. Prerequisites: graduate standing
Schedule Type: Workshop
Contact Hours: 1-3 other
Grade Mode: Satisfactory/Unsatisfactory

EXPH 55065 EXERCISE TESTING 3 Credit Hours
(Cross-listed with EXSC 45065) Lecture and laboratory experiences dealing with the administration and interpretation of exercise tests.
Prerequisite: graduate standing.
Schedule Type: Combined Lecture and Lab
Contact Hours: 2 lecture, 2 lab
Grade Mode: Standard Letter

EXPH 55070 ELECTROCARDIOGRAPHY FOR THE EXERCISE PHYSIOLOGIST 3 Credit Hours
(Cross-listed with EXSC 45070) Designed to provide students with the knowledge base in electrocardiography. Students work on interpreting the 12-lead electrocardiogram with clinical case studies to enhance the knowledge base of the exercise specialist.
Prerequisite: Graduate standing and special approval.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

EXPH 55080 PHYSIOLOGY OF EXERCISE 3 Credit Hours
(Cross-listed with EXSC 45080) Physiological bases of muscular activity with special attention to general effects of exercise on body function. Laboratory included.
Prerequisite: Graduate standing.
Schedule Type: Combined Lecture and Lab
Contact Hours: 2 lecture, 2 lab
Grade Mode: Standard Letter

EXPH 60610 PHYSIOLOGY OF AGING: IMPLICATIONS FOR HUMAN BEHAVIOR 3 Credit Hours
(Cross-listed with EXPH 70610) Examine physiological changes which accompany advancing age. Special attention is paid to the effect of these changes on sensory motor and cognitive behavior.
Prerequisite: graduate standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

EXPH 63050 RESEARCH PROCESS IN ATHLETIC TRAINING AND EXERCISE PHYSIOLOGY 3 Credit Hours
(Cross-listed with EXPH 73050) The research process and statistical concepts applied to athletic training and exercise physiology.
Prerequisite: graduate standing.
Schedule Type: Combined Lecture and Lab
Contact Hours: 2 lecture, 2 lab
Grade Mode: Standard Letter

EXPH 63051 QUANTITATIVE AND RESEARCH METHODS IN ATHLETIC TRAINING AND EXERCISE PHYSIOLOGY 3 Credit Hours
(Cross-listed with EXPH 73051) Advanced topics in research design and statistical methods applied to exercise, physiology and athletic training.
Prerequisite: EXPH 63050 and graduate standing.
Schedule Type: Combined Lecture and Lab
Contact Hours: 2 lecture, 2 lab
Grade Mode: Standard Letter

EXPH 63052 ADVANCED RESEARCH DESIGN AND STATISTICS IN EXERCISE PHYSIOLOGY 3 Credit Hours
(Cross-listed with EXPH 73052) Advanced topics in research design and statistical analysis with computer applications in exercise physiology.
Prerequisite: EXPH 63051 and graduate standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

EXPH 63055 RESEARCH SEMINAR 1 Credit Hour
(Repeatable for credit) (Cross-listed with ATTR 63055 and ATTR 73055 and EXPH 73055 and SRM 63055 and SRM 73055) Presentation and discussion of research by faculty and students. A total of 2 credits may be applied toward degree requirements.
Prerequisite: Graduate standing.
Schedule Type: Seminar
Contact Hours: 1 other
Grade Mode: Satisfactory/Unsatisfactory

EXPH 63056 INDIVIDUAL INVESTIGATION IN EXERCISE PHYSIOLOGY 1-3 Credit Hours
(Cross-listed with EXPH 73056) Independent study completed under the supervision of a faculty member. Written approval of supervising faculty member and School Director required prior to registration.
Prerequisite: graduate standing and special approval.
Schedule Type: Individual Investigation
Contact Hours: 1-3 other
Grade Mode: Standard Letter

EXPH 63096 RESEARCH 1-15 Credit Hours
(Repeatable for credit) (Cross-listed with ATTR 63096 and ATTR 73096 and EXPH 73096 and SRM 63096 and SRM 73096) Research or individual investigation.
Prerequisite: Graduate standing.
Schedule Type: Research
Contact Hours: 1-15 other
Grade Mode: Standard Letter-S/U-IP
EXPH 63193   VARIABLE TITLE WORKSHOP IN EXERCISE PHYSIOLOGY  
1-3 Credit Hours 
(Repeatable for credit) Workshop in exercise physiology; topics vary. 
Maximum 4 hours applied to the degree. Prerequisites: graduate standing 
Schedule Type: Workshop 
Contact Hours: 1-3 other 
Grade Mode: Satisfactory/Unsatisfactory 

EXPH 63195   SPECIAL TOPICS IN EXERCISE PHYSIOLOGY  
1-3 Credit Hours 
(Repeatable for credit) (Cross-listed with EXPH 73195) Selected and 
varied topics of relevance in exercise physiology. 
Prerequisite: graduate standing. 
Schedule Type: Lecture 
Contact Hours: 1-3 lecture 
Grade Mode: Standard Letter 

EXPH 63199   THESIS I  
2-6 Credit Hours 
(Cross-listed with ATTR 63199 and SRM 63199) Thesis students must 
register for a total of 6 hours, 2 to 6 hours in a semester distributed over 
several semesters if desired. 
Prerequisite: Graduate standing. 
Schedule Type: Masters Thesis 
Contact Hours: 3 other 
Grade Mode: Satisfactory/Unsatisfactory-IP 

EXPH 63209   THESIS II  
2 Credit Hours 
(Cross-listed with ATTR 63209 and SRM 63209) Thesis students must 
continue registration each semester until all degree requirements are 
met. 
Prerequisite: EXPH 63199 and graduate standing. 
Schedule Type: Masters Thesis 
Contact Hours: 2 other 
Grade Mode: Satisfactory/Unsatisfactory-IP 

EXPH 65075   MUSCLE FUNCTION AND EXERCISE  
3 Credit Hours 
(Cross-listed with EXPH 75075) Characteristics of skeletal muscle related 
to contraction during exercise, strength, elasticity, fatigue, and training. 
Electromyographic analysis of muscle function emphasized. 
Prerequisite: graduate standing. 
Schedule Type: Lecture 
Contact Hours: 3 lecture 
Grade Mode: Standard Letter 

EXPH 65076   ENVIRONMENTAL STRESS AND EXERCISE  
3 Credit Hours 
(Slashed with EXPH 75076) Effects of heat, cold, pressure, pollution and 
psychological stress upon physiological responses to exercise. Lecture 
and laboratory. 
Prerequisite: graduate standing. 
Schedule Type: Combined Lecture and Lab 
Contact Hours: 2 lecture, 2 lab 
Grade Mode: Standard Letter 

EXPH 65080   PHYSIOLOGICAL BASIS OF EXERCISE AND SPORT  
3 Credit Hours 
(Cross-listed with EXPH 75080) Application of physiological concepts to 
human performance. Includes role of testing, training strength 
and endurance, nutritional considerations, environmental influences 
and adapted exercise programs. 
Prerequisite: graduate standing. 
Schedule Type: Combined Lecture and Lab 
Contact Hours: 2 lecture, 2 lab 
Grade Mode: Standard Letter 

EXPH 65081   ENERGY METABOLISM AND BODY COMPOSITION  
3 Credit Hours 
(Cross-listed with EXPH 75081) Measurement of metabolic response 
to exercise. Topics include ergometry, spirometry, energy expenditure 
body composition and performance correlates of strength power and 
endurance. 
Prerequisite: graduate standing. 
Schedule Type: Lecture 
Contact Hours: 3 lecture 
Grade Mode: Standard Letter 

EXPH 65082   CARDIO-RESPIRATORY FUNCTION  
3 Credit Hours 
(Cross-listed with EXPH 75082) Measurement of the cardiovascular- 
respiratory response to exercise. Includes resting spirometry, lung 
function during exercise, electrocardiography, blood pressure, PWC 
testing and exercise prescription. 
Prerequisite: graduate standing. 
Schedule Type: Lecture 
Contact Hours: 2 lecture, 2 lab 
Grade Mode: Standard Letter 

EXPH 65083   EXERCISE ENERGY METABOLISM  
3 Credit Hours 
(Cross-listed with EXPH 75083) Energy transformations during exercise. 
Emphasis on controlling mechanisms that regulate the anabolic and 
catabolic responses to both acute and chronic exercise. 
Prerequisite: graduate standing. 
Schedule Type: Combined Lecture and Lab 
Contact Hours: 2 lecture, 2 lab 
Grade Mode: Standard Letter 

EXPH 65084   CARDIOVASCULAR-RESPIRATORY DYNAMICS DURING EXERCISE  
3 Credit Hours 
(Cross-listed with EXPH 75084) Responses of the cardiovascular and 
respiratory systems to exercise. Use of noninvasive methods to measure 
cardio-respiratory function emphasized. Lecture and laboratory. 
Prerequisite: graduate standing. 
Schedule Type: Combined Lecture and Lab 
Contact Hours: 2 lecture, 2 lab 
Grade Mode: Standard Letter 

EXPH 65086   NEUROBIOLOGY OF MOVEMENT AND EXERCISE  
3 Credit Hours 
(Cross-listed with EXPH 75086) Provide students with knowledge to 
understand the role of the muscular and nervous systems in human 
movement and exercise. Motor disorders and rehabilitation techniques 
will also be discussed. Lecture and laboratory. 
Prerequisite: graduate standing. 
Schedule Type: Combined Lecture and Lab 
Contact Hours: 2 lecture, 2 lab 
Grade Mode: Standard Letter 

EXPH 65192   INTERNSHIP IN EXERCISE PHYSIOLOGY  
1-6 Credit Hours 
(Repeatable for a maximum of 8 credit hours) (Cross-listed with EXPH 75192) Field experience in exercise physiology programs and 
testing in Kent State University adult fitness program or cooperating 
agencies. 
Prerequisite: graduate standing and special approval. 
Schedule Type: Practicum or Internship 
Contact Hours: 3-18 other 
Grade Mode: Satisfactory/Unsatisfactory-IP
EXPH 70610  PHYSIOLOGY OF AGING: IMPLICATIONS FOR HUMAN BEHAVIOR 3 Credit Hours
(Cross-listed with EXPH 60610) Examine physiological changes which accompany advancing age. Special attention is paid to the effect of these changes on sensory motor and cognitive behavior.
Prerequisite: doctoral standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

EXPH 73050  RESEARCH PROCESSES IN ATHLETIC TRAINING AND EXERCISE PHYSIOLOGY 3 Credit Hours
(Cross-listed with EXPH 63050) The research process and statistical concepts applied to athletic training and exercise physiology.
Prerequisite: doctoral standing.
Schedule Type: Combined Lecture and Lab
Contact Hours: 2 lecture, 2 lab
Grade Mode: Standard Letter

EXPH 73051  QUANTITATIVE AND RESEARCH METHODS IN ATHLETIC TRAINING AND EXERCISE PHYSIOLOGY 3 Credit Hours
(Cross-listed with EXPH 63051) Research design and statistical methods applied to exercise physiology and athletic training.
Prerequisite: EXPH 73050 and doctoral standing.
Schedule Type: Combined Lecture and Lab
Contact Hours: 2 lecture, 2 lab
Grade Mode: Standard Letter

EXPH 73052  ADVANCED RESEARCH DESIGN AND STATISTICS IN EXERCISE PHYSIOLOGY 3 Credit Hours
(Cross-listed with EXPH 63052) Advanced topics in research design and statistical analysis with computer applications in exercise physiology.
Prerequisite: EXPH 63051 or EXPH 73051 and doctoral standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

EXPH 73055  SPECIAL TOPICS IN EXERCISE PHYSIOLOGY 1-3 Credit Hours
(Repeatable for a maximum of 6 credit hours) (Cross-listed with EXPH 63195) Selected an varied topics of relevance in exercise physiology.
Prerequisite: doctoral standing.
Schedule Type: Lecture
Contact Hours: 1-3 lecture
Grade Mode: Standard Letter

EXPH 73056  RESEARCH SEMINAR 1 Credit Hour
(Repeatable for credit) (Cross-listed with ATTR 63095 and ATTR 73095 and EXPH 63095 and SRM 63095 and SRM 73095) Presentation and discussion of research by faculty and students. A total of 2 credits may be applied toward degree requirements.
Prerequisite: Doctoral standing.
Schedule Type: Seminar
Contact Hours: 1 other
Grade Mode: Satisfactory/Unsatisfactory

EXPH 73096  INDIVIDUAL INVESTIGATION IN EXERCISE PHYSIOLOGY 1-3 Credit Hours
(Repeatable for a maximum of 6 credit hours) (Cross-listed with EXPH 63096) Independent study completed under the supervision of a faculty member. Written approval of supervising faculty member and School Director required prior to registration.
Prerequisite: doctoral standing and special approval.
Schedule Type: Individual Investigation
Contact Hours: 1-3 other
Grade Mode: Standard Letter-IP

EXPH 73195  SPECIAL TOPICS IN EXERCISE PHYSIOLOGY 1-3 Credit Hours
(Repeatable for a maximum of 6 credit hours) (Cross-listed with EXPH 63195) Selected an varied topics of relevance in exercise physiology.
Prerequisite: doctoral standing.
Schedule Type: Lecture
Contact Hours: 1-3 lecture
Grade Mode: Standard Letter

EXPH 75004  BIOMECHANICS 3 Credit Hours
(Cross-listed with ) Survey of biomechanics, with particular emphasis on skeletal muscle mechanics.
Prerequisite: Doctoral standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
Grade Mode: Standard Letter

EXPH 75076  ENVIRONMENTAL STRESS AND EXERCISE 3 Credit Hours
(Slashed with EXPH 65076) Effects of heat, cold, pressure, pollution and psychological stress upon physiological responses to exercise. Lecture and laboratory.
Prerequisite: doctoral standing.
Schedule Type: Combined Lecture and Lab
Contact Hours: 2 lecture, 2 lab
Grade Mode: Standard Letter

EXPH 75079  PHYSIOLOGICAL BASIS OF HUMAN PERFORMANCE 3 Credit Hours
Application of physiological concepts to human performance. Includes role of testing, training, strength and endurance, nutritional considerations, environmental influences, and adapted exercise programs.
Prerequisite: doctoral standing.
Schedule Type: Combined Lecture and Lab
Contact Hours: 2 lecture, 2 lab
Grade Mode: Standard Letter
EXPH 75082 CARDIO-RESPIRATORY FUNCTION  3 Credit Hours  
(Cross-listed with EXPH 65082) Measurement of the cardiovascular-respiratory response to exercise. Includes resting spirometry, lung function during exercise, electrocardiography, blood pressure, PWC testing and exercise prescription.  
**Prerequisite:** doctoral standing.  
**Schedule Type:** Lecture  
**Contact Hours:** 3 lecture  
**Grade Mode:** Standard Letter  

EXPH 75083 EXERCISE ENERGY METABOLISM  3 Credit Hours  
(Cross-listed with EXPH 65083) Energy transformations during exercise. Emphasis on controlling mechanisms that regulate the anabolic and catabolic responses to both acute and chronic exercise.  
**Prerequisite:** doctoral standing.  
**Schedule Type:** Combined Lecture and Lab  
**Contact Hours:** 2 lecture, 2 lab  
**Grade Mode:** Standard Letter  

EXPH 75084 CARDIOVASCULAR-RESPIRATORY DYNAMICS DURING EXERCISE  3 Credit Hours  
(Cross-listed with EXPH 65084) Responses of the cardiovascular and respiratory systems to exercise. Use of noninvasive methods to measure cardio-respiratory function emphasized. Lecture and laboratory.  
**Prerequisite:** doctoral standing.  
**Schedule Type:** Combined Lecture and Lab  
**Contact Hours:** 2 lecture, 2 lab  
**Grade Mode:** Standard Letter  

EXPH 75086 NEUROBIOLOGY OF EXERCISE AND MOVEMENT  3 Credit Hours  
(Cross-listed with EXPH 65086) Provides students with knowledge to understand the role of the muscular and nervous systems in human movement and exercise. Motor disorders and rehabilitation techniques will also be discussed. Lecture and laboratory.  
**Prerequisite:** graduate standing.  
**Schedule Type:** Combined Lecture and Lab  
**Contact Hours:** 2 lecture, 2 lab  
**Grade Mode:** Standard Letter  

EXPH 75192 INTERNSHIP IN EXERCISE PHYSIOLOGY  1-6 Credit Hours  
(Repeatable for a maximum of 8 credit hours) (Cross-listed with EXPH 65192) (Cross-listed with EXPH 65192) Field experience in exercise physiology programs and testing in KSU adult fitness program or cooperating agencies.  
**Prerequisite:** doctoral standing and special approval.  
**Schedule Type:** Practicum or Internship  
**Contact Hours:** 3-18 other  
**Grade Mode:** Satisfactory/Unsatisfactory-IP  

EXPH 83098 RESEARCH  1-15 Credit Hours  
(Repeatable for credit) Research for doctoral students.  
**Prerequisite:** special approval and doctoral standing.  
**Schedule Type:** Research  
**Contact Hours:** 1-15 other  
**Grade Mode:** Standard Letter-S/U-IP  

EXPH 83199 DISSERTATION I  15 Credit Hours  
(Repeatable for credit) Doctoral dissertation, for which registration in at least two semesters is required, first of which will be semester in which dissertation work is begun and continuing until the completion of 30 hours.  
**Prerequisite:** Special approval and doctoral standing.  
**Schedule Type:** Dissertation  
**Contact Hours:** 15 other  
**Grade Mode:** Satisfactory/Unsatisfactory-IP  

EXPH 83299 DISSERTATION II  15 Credit Hours  
(Repeatable for credit) Continuing registration required of doctoral students who have completed the initial 30 hours of dissertation and continuing until all degree requirements are met.  
**Prerequisite:** EXPH 83199 and doctoral standing.  
**Schedule Type:** Dissertation  
**Contact Hours:** 15 other  
**Grade Mode:** Satisfactory/Unsatisfactory-IP