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.  
Prerequisite: Graduate standing.  
Schedule Type: Workshop  
Contact Hours: 1-3 other  
Grade Mode: Satisfactory/Unsatisfactory

EXPH 55040  ADVANCED STRENGTH AND CONDITIONING  3 Credit Hours
(Slashed with EXSC 45040) Advanced principles in strength and conditioning. Learn and understand the energy systems, anatomy, physiology and proper lifting technique of strength, speed, agility and conditioning exercises for practical application with athletes.  
Prerequisite: Graduate standing.  
Schedule Type: Lecture  
Contact Hours: 3 lecture  
Grade Mode: Standard Letter

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) 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 63095  RESEARCH SEMINAR  1 Credit Hour
(Repeatable for credit) Research carried out by the student 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 other  
Grade Mode: Satisfactory/Unsatisfactory

EXPH 63096  INDIVIDUAL INVESTIGATION IN EXERCISE PHYSIOLOGY  1-3 Credit Hours
(Repeatable for a maximum of 6 credit hours) 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.  
Schedule Type: Individual Investigation  
Contact Hours: 3-9 other  
Grade Mode: Standard Letter-IP

EXPH 63098  RESEARCH  1-15 Credit Hours
(Repeatable for credit) Research carried out by the student under the supervision of a faculty member.  
Prerequisite: Graduate standing.  
Schedule Type: Research  
Contact Hours: 1-15 other  
Grade Mode: Standard Letter-IP
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
<th>Grade Mode</th>
<th>Schedule Type</th>
<th>Prerequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXPH 63193</td>
<td>VARIABLE TITLE WORKSHOP IN EXERCISE PHYSIOLOGY</td>
<td>1-3</td>
<td>Satisfactory/Unsatisfactory</td>
<td>Lecture</td>
<td>Graduate standing</td>
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<td></td>
<td>(Repeatable for credit) Workshop in exercise physiology; topics vary. Maximum 4 hours applied to the degree.</td>
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<tr>
<td>EXPH 63195</td>
<td>SPECIAL TOPICS IN EXERCISE PHYSIOLOGY</td>
<td>1-3</td>
<td>Satisfactory/Unsatisfactory</td>
<td>Lecture</td>
<td>Graduate standing</td>
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<tr>
<td></td>
<td>(Repeatable for credit) Selected and varied topics of relevance in exercise physiology.</td>
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<tr>
<td>EXPH 63199</td>
<td>THESIS I</td>
<td>2-6</td>
<td>Satisfactory/Unsatisfactory-IP</td>
<td>Practicum or Internship</td>
<td>EXPH 63199; and graduate standing.</td>
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<tr>
<td></td>
<td>Thesis students must register for a total of 6 hours, 2 to 6 hours in a semester distributed over several semesters if desired.</td>
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<tr>
<td>EXPH 63299</td>
<td>THESIS II</td>
<td>2</td>
<td>Standard Letter</td>
<td>Lecture</td>
<td>Masters Thesis</td>
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<td></td>
<td>Thesis students must continue registration each semester until all degree requirements are met.</td>
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<tr>
<td>EXPH 65075</td>
<td>MUSCLE FUNCTION AND EXERCISE</td>
<td>3</td>
<td>Satisfactory/Unsatisfactory-IP</td>
<td>Lecture</td>
<td>Graduate standing</td>
</tr>
<tr>
<td></td>
<td>(Cross-listed with EXPH 75075) Characteristics of skeletal muscle related to contraction during exercise, strength, elasticity, fatigue, and training. Electromyograph analysis of muscle function emphasized.</td>
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<tr>
<td>EXPH 65076</td>
<td>ENVIRONMENTAL STRESS AND EXERCISE</td>
<td>3</td>
<td>Standard Letter</td>
<td>Lecture</td>
<td>Graduate standing</td>
</tr>
<tr>
<td></td>
<td>(Slashed with EXPH 75076) Effects of heat, cold, pressure, pollution and psychological stress upon physiological responses to exercise. Lecture and laboratory.</td>
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<tr>
<td>EXPH 65080</td>
<td>PHYSIOLOGICAL BASIS OF EXERCISE AND SPORT</td>
<td>3</td>
<td>Standard Letter</td>
<td>Lecture</td>
<td>Graduate standing</td>
</tr>
<tr>
<td></td>
<td>(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.</td>
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<tr>
<td>EXPH 65081</td>
<td>ENERGY METABOLISM AND BODY COMPOSITION</td>
<td>3</td>
<td>Satisfactory/Unsatisfactory-IP</td>
<td>Lecture</td>
<td>Graduate standing</td>
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<tr>
<td></td>
<td>(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.</td>
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<tr>
<td>EXPH 65082</td>
<td>CARDIO-RESPIRATORY FUNCTION</td>
<td>3</td>
<td>Standard Letter</td>
<td>Lecture</td>
<td>Graduate standing</td>
</tr>
<tr>
<td></td>
<td>(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.</td>
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<tr>
<td>EXPH 65083</td>
<td>EXERCISE ENERGY METABOLISM</td>
<td>3</td>
<td>Standard Letter</td>
<td>Lecture</td>
<td>Graduate standing</td>
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<td></td>
<td>(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.</td>
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<tr>
<td>EXPH 65084</td>
<td>CARDIOVASCULAR-RESPIRATORY DYNAMICS DURING EXERCISE</td>
<td>3</td>
<td>Standard Letter</td>
<td>Lecture</td>
<td>Graduate standing</td>
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<td></td>
<td>(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.</td>
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<tr>
<td>EXPH 65086</td>
<td>NEUROBIOLOGY OF MOVEMENT AND EXERCISE</td>
<td>3</td>
<td>Standard Letter</td>
<td>Lecture</td>
<td>Graduate standing</td>
</tr>
<tr>
<td></td>
<td>(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.</td>
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<tr>
<td>EXPH 65192</td>
<td>INTERNSHIP IN EXERCISE PHYSIOLOGY</td>
<td>1-6</td>
<td>Satisfactory/Unsatisfactory-IP</td>
<td>Practicum or Internship</td>
<td>Graduate standing; and special approval.</td>
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<td></td>
<td>(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.</td>
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</tbody>
</table>
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 73095 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 student 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 and 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 ATTR 65004) 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 75075 MUSCLE FUNCTION AND EXERCISE 3 Credit Hours
(Cross-listed with EXPH 65075) Characteristics of skeletal muscle related to contraction during exercise, strength, elasticity, fatigue and training. Electromyograph analysis of muscle function emphasized.
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 75080 PHYSIOLOGICAL BASIS OF EXERCISE AND SPORT 3 Credit Hours
(Cross-listed with EXPH 65080) 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 75081 ENERGY METABOLISM AND BODY COMPOSITION 3 Credit Hours
(Cross-listed with EXPH 65081) Measurement of metabolic response to exercise. Topics include ergometry, spirometry, energy expenditure, body composition and performance correlates of strength, power and endurance.
Prerequisite: Doctoral standing.
Schedule Type: Lecture
Contact Hours: 3 lecture
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) 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: Doctoral standing; and special approval.
Schedule Type: Research
Contact Hours: 1-15 other
Grade Mode: Standard Letter-IP

EXPH 83199 DISSERTATION I 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

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