**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  
(Slashed 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 63091  **Research Seminar**  1 Credit Hour  
(Repeatable for credit) (Slashed with EXPH 73091) 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 63096  **Individual Investigation in Exercise Physiology**  1-3 Credit Hours  
(Repeatable for a maximum of 6 credit hours) (Slashed with EXPH 73096) 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:** 3-9 other  
**Grade Mode:** Standard Letter

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
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.
Prerequisite: 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) (Slashed 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
(Repeatable for credit) 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 63299 THESIS II 2 Credit Hours
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
(Slashed with EXPH 75075) Characteristics of skeletal muscle related to contraction during exercise, strength, elasticity, fatigue, and training. Electromyograph 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
(Slashed 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
(Slashed 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
(Slashed 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
(Slashed 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
(Slashed 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
(Slashed 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 1-9 Credit Hours
(Repeatable for a maximum of 9 credit hours) 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: Practical Experience
Contact Hours: 3-27 other
Grade Mode: Satisfactory/Unsatisfactory-IP
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<tr>
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<td>PHYSIOLOGY OF AGING: IMPLICATIONS FOR HUMAN BEHAVIOR</td>
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<td>RESEARCH PROCESSES IN ATHLETIC TRAINING AND EXERCISE PHYSIOLOGY</td>
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<td>EXPH 73096</td>
<td>INDIVIDUAL INVESTIGATION IN EXERCISE PHYSIOLOGY</td>
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<td>EXPH 73195</td>
<td>SPECIAL TOPICS IN EXERCISE PHYSIOLOGY</td>
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<td>EXPH 75004</td>
<td>BIOMECHANICS</td>
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<td>(Cross-listed with ATTR 65004) Survey of biomechanics, with particular emphasis on skeletal muscle mechanics.</td>
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<td>EXPH 75075</td>
<td>MUSCLE FUNCTION AND EXERCISE</td>
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<td>ENVIRONMENTAL STRESS AND EXERCISE</td>
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<td>PHYSIOLOGICAL BASIS OF EXERCISE AND SPORT</td>
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<td>ENERGY METABOLISM AND BODY COMPOSITION</td>
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<td>(Slashed 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.</td>
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<td>Prerequisite: Doctoral standing.</td>
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<td>Contact Hours: 3 lecture</td>
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<td>EXPH 75082</td>
<td>CARDIO-RESPIRATORY FUNCTION</td>
<td>3</td>
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<td>(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.</td>
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<td>EXPH 75083</td>
<td>EXERCISE ENERGY METABOLISM</td>
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<td>(Slashed with EXPH 65083) 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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<td>Contact Hours: 2 lecture, 2 lab</td>
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EXPH 75084  CARDIOVASCULAR-RESPIRATORY DYNAMICS DURING
EXERCISE  3 Credit Hours
(Slashed 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
(Slashed 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  1-9 Credit
Hours
(Repeatable for a maximum of 9 credit hours) Field experience in exercise
physiology programs and testing in Kent State University adult fitness
program or cooperating agencies.
Prerequisite: Doctoral standing; and special approval.
Schedule Type: Practical Experience
Contact Hours: 3-27 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) 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: Doctoral standing; and special approval.
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