

**Murray State University**  
**COURSE SYLLABUS**

Fall 2018

**DEPARTMENT: ADOLESCENT, CAREER, AND SPECIAL EDUCATION**

**COURSE PREFIX: PHE    COURSE NUMBER: 405                    CREDIT HOURS: 3**

**I. TITLE:** Physiology of Exercise and Fitness

**II. COURSE DESCRIPTION AND PREREQUISITE(S):**

Concepts of physiology as applied to exercise and fitness directed toward the needs of physical education teachers.

**Prerequisite(s):** HPE 175, all university studies math/science requirements, and senior standing; or permission of instructor.

**III. COURSE OBJECTIVES:**

Class activities will be centered on the attainment of the course objectives listed below. Following each objective, and enclosed in parentheses, are numbers that reference the Joint Committee on National Health Education Standards (NHES), Kentucky Teacher Performance Standards and Certification (KTPS), the Interstate Teacher Assessment and Support Continuum (InTASC), and the Society of Health and Physical Educators American (SHAPE), addressed by that objective. Upon successful completion of this class, students will be able to

- A. discuss in depth the importance of oxygen uptake in the energy production process (KTPS/InTASC 4, 5; NHES 1; SHAPE 2 );
- B. describe the potential changes in muscle after strength, endurance, or power training (KTPS/InTASC 4; NHES 1; SHAPE 2 );
- C. explain how nerves and skeletal muscle combine to control muscle contraction (KTPS/InTASC 4; NHES 1; SHAPE 2);
- D. describe the metabolic events that occur during the transition from rest to steady state and maximal exercise as well as during recovery (KTPS/InTASC 4, 5; NHES 1, 7; SHAPE 2);
- E. identify the changes that occur for heart rate, stroke volume, cardiac output, and arteriovenous oxygen difference during different exercise conditions (KTPS/InTASC 4, 5; NHES 1; SHAPE 2);
- F. explain how cardiovascular structure and function change in response to endurance and strength training (KTPS/InTASC 4, 5; NHES 1; SHAPE 2);
- G. describe the anatomy of the cardiovascular system and relate it to disease processes that occur with inactivity and other lifestyle problems (KTPS/InTASC 4; NHES 1; SHAPE 2);
- H. describe the transport of oxygen and carbon dioxide during rest and exercise and discuss changes that occur due to exercise training of various types (KTPS/InTASC 4; NHES 1; SHAPE 2);

- I. describe the hormonal responses to exercise that influence muscle energy metabolism, fluid balance, vascular hemodynamics, and protein synthesis (KTPS/InTASC 4, 5; NHES 1; SHAPE 2);
- J. identify the principles behind the methods of training for specific sports and athletic activities (KTPS/InTASC 4, 5; NHES 1; SHAPE 2);
- K. explain the concepts of overtraining and detraining (KTPS/InTASC 4; 5; NHES 1; SHAPE 2);
- L. describe the physiological bases of strength development (KTPS/InTASC 4; 5; NHES 1; SHAPE 2);
- M. identify the various nutritional strategies use for optimizing performance (KTPS/InTASC 4; NHES 1 SHAPE 1);
- N. evaluate the benefits of various ergogenic aids (KTPS/InTASC 4; NHES 1; SHAPE 2);
- O. demonstrate a basic understanding of body composition (KTPS/InTASC 4; 5; NHES 1; SHAPE 2);
- P. employ various tests for determining body composition (KTPS/InTASC 4; 5; NHES 1; SHAPE 2);
- Q. describe the normal growth and development of children and how exercise affects growth and development (KTPS/InTASC 4; 5; NHES 1; SHAPE 2);
- R. describe the health implications for overweight and obesity (KTPS/InTASC 4; 5; NHES 1; SHAPE 2);
- S. explain the events that lead to heat illness and provide recommendations for preventing the malady (KTPS/InTASC 4; 5; NHES 1; SHAPE 2); and
- T. perform skills required for American Red Cross 1<sup>st</sup> Aid and CPR Certification (KTPS/InTASC 4; 5; NHES 1; SHAPE 2).

The COEHS Theme of Educator as Reflective Decision-Maker is addressed in this course by requiring students to reflect on various measures of personal fitness. In addition students reflect on the applicability of the fitness measures to students in the public schools.

The EPSB Theme of Assessment is explored in the course through the collection and analysis of fitness data using various instruments that may be utilized for assessing fitness in public school settings.

#### **IV. CONTENT OUTLINE:**

- A. Metabolism and energy production during rest and exercise
- B. Systemic response to exercise
- C. Methods to improve exercise performance
- D. Measurement techniques for fitness and exercise response
- E. Growth, development, aging, and exercise
- F. Gender and exercise performance
- G. Exercise, health, and disease prevention

**V. INSTRUCTIONAL ACTIVITIES:**

Lecture/discussion sessions complemented with PowerPoint presentations and paper materials provided in the course manual.

**VI. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES:**

Students in this course have many opportunities to administer various physical tests, including fitness tests appropriate for use in school settings and in physical fitness/stress testing settings.

**VII. TEXT(S) AND RESOURCES:**

American Red Cross 1<sup>st</sup> Aid / CPR & AED certification packet. Available in the MSU Bookstore under the HEA 195 section. **You must bring the voucher to class!**

**VIII. EVALUATION AND GRADING PROCEDURES:**

**A. Grading Scale**

90-100%	A
80-89%	B
70-79%	C
60-69%	D
0-59%	E

**IX. ATTENDANCE POLICY:**

Students are expected to adhere to the MSU Attendance Policy outlined in the current MSU *Bulletin*. Students are expected to attend all class sessions unless illness or other acceptable reasons warrant absence.

**X. ACADEMIC HONESTY POLICY:**

Murray State University takes seriously its moral and educational obligation to maintain high standards of academic honesty and ethical behavior. Instructors are expected to evaluate students' academic achievements accurately, as well as ascertain that work submitted by students is authentic and the result of their own efforts, and consistent with established academic standards. Students are obligated to respect and abide by the basic standards of personal and professional integrity.

**Violations of Academic Honesty include:**

**Cheating** - Intentionally using or attempting to use unauthorized information such as books, notes, study aids, or other electronic, online, or digital devices in any academic exercise; as well as unauthorized communication of information by any means to or from others during any academic exercise.

**Fabrication and Falsification** - Intentional alteration or invention of any information or citation in an academic exercise. Falsification involves changing information whereas fabrication involves inventing or counterfeiting information.

**Multiple Submission** - The submission of substantial portions of the same academic work, including oral reports, for credit more than once without authorization from the instructor.

**Plagiarism** - Intentionally or knowingly representing the words, ideas, creative work, or data of someone else as one's own in any academic exercise, without due and proper acknowledgement.

Instructors should outline their expectations that may go beyond the scope of this policy at the beginning of each course and identify such expectations and restrictions in the course syllabus. When an instructor receives evidence, either directly or indirectly, of academic dishonesty, he or she should investigate the instance. The faculty member should then take appropriate disciplinary action.

Disciplinary action may include, but is not limited to the following:

- 1) Requiring the student(s) to repeat the exercise or do additional related exercise(s).
- 2) Lowering the grade or failing the student(s) on the particular exercise(s) involved.
- 3) Lowering the grade or failing the student(s) in the course.

**If the disciplinary action results in the awarding of a grade of E in the course, the student(s) may not drop the course.**

Faculty reserve the right to invalidate any exercise or other evaluative measures if substantial evidence exists that the integrity of the exercise has been compromised. Faculty also reserve the right to document in the course syllabi further academic honesty policy elements related to the individual disciplines.

A student may appeal the decision of the faculty member with the department chair in writing within five working days. Note: If, at any point in this process, the student alleges that actions have taken place that may be in violation of the Murray State University Non-Discrimination Statement, this process must be suspended and the matter be directed to the Office of Institutional Diversity, Equity and Access. Any appeal will be forwarded to the appropriate university committee as determined by the Provost.

## **XI. NON-DISCRIMINATION POLICY AND STUDENTS WITH DISABILITIES:**

### Policy Statement

Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, gender, sexual orientation, religion, age, veteran status, or disability in employment or application for employment, admissions, or other provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities equal access to participate in all programs and activities.

In particular and without limiting the preceding and pursuant to consistent with the requirements of Title VI of the Civil Rights Act of 1964 and its regulations 34 CFR 100 et seq.; Section 504 of the Rehabilitation Act of 1973 and its regulations 34 CFR 104; Title IX of the Education Amendments of 1972, 20 USC 1681 et seq., and its regulations 34 CFR 106 et seq; and the Age Discrimination Act of 1975 and its regulations 34 CFR 110, Murray State University does not discriminate on the basis of race, color, national origin, sex, handicap, or age in its educational programs and activities. This non-discrimination in education programs and activities extends to employment and

admissions and to recruitment, financial aid, academic programs, students services, athletics, and housing. Murray State is required by Title IX and 34 CFR part 106 not to discriminate on the basis of sex and the prohibition against sex discrimination specifically includes a prohibition of sexual harassment and sexual violence. Examples of prohibited sexual harassment and sexual violence can be found in the “Policy Prohibiting Sexual Harassment” which can be accessed via the link referenced in Appendix 1.

For more information concerning the application of these provisions may be referenced to: 1) the Executive Director of Institutional Diversity, Equity, and Access/ Murray State University Title IX Coordinator, Murray State University, 103 Wells Hall, Murray, KY 42071. Telephone: (270) 809-3155 (voice) Fax: (270) 809-6887; TDD: (270) 809-3361; Email: [msu.titleix@murraystate.edu](mailto:msu.titleix@murraystate.edu)

#### Students with Disabilities

Students requiring special assistance due to a disability should visit the Office of Student Disability Services immediately for assistance with accommodations. For more information, students should contact the Office of Student Disability Services, 423 Wells Hall, Murray, KY 42071. 270-809-2018 (voice), 270-809-5889 (TDD).

#### **XII. FLAG SYSTEM/CONTINUOUS ASSESSMENT:**

Student progress is continuously assessed throughout the teacher preparation program. Appropriate professional characteristics and dispositions, in addition to academic achievement, are assessed. Positive and negative flags are submitted by faculty to Teacher Education Services and then presented to admissions committees. Negative flags are carefully reviewed to make a determination as to whether a student should be denied admission OR if a professional development plan will be designed for the student’s progress towards program completion. **NEGATIVE FLAGS MAY BE GROUNDS FOR DENIAL OF ADMISSION TO TEACHER EDUCATION.**