PLYMOUTH STATE UNIVERSITY
Department of Health and Human Performance
Course Outline

Course: **PE 3580** Title: **Physiology of Exercise**
Credits: **3** Instructor: **Dr. John M. Rosene**
Email: **jmrosene@plymouth.edu** Office: **D&M 409, Ext. 3114**
Office Hours: **M,W,F 10:00-11:00am; M 5:30-6:30pm; or by appointment**

Overview: Exercise physiology is concerned with human functions under the stress of muscular activity; thus it provides a basis for the study of physical fitness and athletic training. A development toward scientific investigation and application of recent research is provided and discussed. Designed to provide the needed link between theory and practice.

Prerequisite: BI 2110 and BI 2120

Required text: Wilmore, JH & Costill, DL. Physiology of sport and exercise. 4th ed. Champaign, IL: Human Kinetics. 2008.

Statement of Outcomes: At the end of this course the student will be able to:

1) Identify important events/people in the history of exercise physiology.

2) Identify structure and function of skeletal muscle.

3) Explain the sliding filament theory of muscular contraction.

4) Differentiate between the different types of muscle fibers via molecular construction and function.

5) Explain the neural control of movement through the change in ionic distribution, synaptic transmission, and the role of proprioception.

6) Understand adaptations to strength training and associated positive and negative affects on the human body.

7) Appreciate basic biochemical concepts and their impact on human performance.

8) Differentiate between biochemical energy systems, their function, and metabolic processes during human movement.

9) Describe the anatomy and function of the cardiovascular/pulmonary system.
10) Describe the effects of exercise on cardiovascular/pulmonary function.

11) Identify mechanisms of heat exchange/temperature regulation for the human body at rest and during activity.

12) Describe the physiological responses to exercise in the heat, cold and at altitude.

13) Describe the anatomy and function of the kidney at rest and exercise.

14) Understand the role of the endocrine system in human function at rest and exercise.

15) Utilize somatotyping to identify different body types.

16) Describe how body composition is related to or affects human performance.

17) Differentiate between ergogenic aids and their impact on human performance.

18) Identify differences between males and females relative to exercise, training, and competition.

19) Understand the aging process and its effect on human performance.

20) Identify and understand the signs and symptoms of overtraining/detraining and how to address these issues in the competitive athlete.

Analysis of Performance:

EXAMINATIONS: There will be three (4) lecture examinations. Examination 1 will cover material presented up to the point of the examination. Examination 2 will cover material presented immediately following examination 1 up to the point of examination 2. Examination 3 will cover material presented immediately following examination 2 up to the point of examination 3. Examination 4 will serve as the final examination and will cover material presented immediately following examination 3 through the conclusion of the course.

Grading:

A = 94 and above
A- = 90 - 93
B+ = 87 - 89
B = 84 – 86
B- = 80 - 83
C+ = 77 - 79
C = 74 – 76
C- = 70 - 73
D+ = 67 - 69
D = 64 – 66
D- = 60 - 63
F = 59 and below

Grades will be weighted in the following way:

First Examination =	25%
Second Examination =	25%
Third Examination =	25%
Fourth Examination =	25%

PE 3580 MWF TENTATIVE LECTURE SCHEDULE

DATE	TOPIC	READING ASSIGNMENT
Wed, Sep 2	Introduction History	Introduction
Fri, Sep 4	Musculoskeletal System	Chapters 1, 2, 3
Mon, Sep 7	Musculoskeletal System	Chapters 1, 2, 3
Wed, Sep 9	Musculoskeletal System	Chapters 1, 2, 3
Fri, Sep 11	Musculoskeletal System Exercise Biochemistry	Chapters 1, 2, 3 Chapter 4
Mon, Sep 14	Exercise Biochemistry	Chapter 4
Wed, Sep 16	Exercise Biochemistry	Chapter 4
Fri, Sep 18	Exercise Biochemistry	Chapter 4
Mon, Sep 21	Exercise Biochemistry	Chapter 4
Wed, Sep 23	Exercise Biochemistry	Chapter 4
Fri, Sep 25	Exercise Biochemistry	Chapter 4
Mon, Sep 28	**EXAMINATION I**	
Wed, Sep 30	Cardiovascular System	Chapter 7
Fri, Oct 2	Cardiovascular System	Chapter 7
Mon, Oct 5	Cardiovascular System	Chapter 7
Wed, Oct 7	Cardiovascular System	Chapter 7
Fri, Oct 9	Cardiovascular System	Chapter 7
Mon, Oct 12	***COLUMBUS DAY*** ***NO CLASSES***	
Wed, Oct 14	Respiratory System	Chapter 8
Fri, Oct 16	Respiratory System	Chapter 8
Mon, Oct 19	Respiratory System	Chapter 8
Wed, Oct 21	Respiratory system	Chapter 8

PE 3580 MWF TENTATIVE LECTURE SCHEDULE

DATE	TOPIC	READING ASSIGNMENT
Fri, Oct 23	**EXAMINATION II**	
Mon, Oct 26	Environmental Physiology	Chapters 10, 11
Wed, Oct 28	Environmental Physiology	Chapters 10, 11
Fri, Oct 30	Environmental Physiology	Chapters 10, 11
Mon, Nov 2	Environmental Physiology	Chapters 10, 11
Wed, Nov 4	Environmental Physiology	Chapters 10, 11
Fri, Nov 6	***NEACSM*** ***NO CLASS***	
Mon, Nov 9	Endocrine System	Chapter 5
Wed, Nov 11	Endocrine System	Chapter 5
Fri, Nov 13	Endocrine System	Chapter 5
Mon, Nov 16	Endocrine System	Chapter 5
Wed, Nov 18	Endocrine System	Chapter 5
Fri, Nov 20	**EXAMINATION III**	
Mon, Nov 23	Body Composition	Chapter 14
Wed, Nov 25	***THANKSGIVING BREAK*** ***NO CLASSES***	
Fri, Nov 27	***THANKSGIVING BREAK*** ***NO CLASSES***	
Mon, Nov 30	Ergogenic Aids	Chapter 15
Wed, Dec 2	Ergogenic Aids	Chapter 15
Fri, Dec 4	Ergogenic Aids	Chapter 15
Mon, Dec 7	Gender Differences	Chapter 18
Wed, Dec 9	Age Related Issues	Chapter 17
Fri, Dec 11	Overtraining/Detraining	Chapter 12
Wed, Dec 16	***EXAMINATION IV***	***8:00 – 10:30 am***