

**The University of Findlay
College of Health Professions
Fall Semester 2003**

*The Mission of the University is to equip our students
for meaningful lives and productive careers.*

Course Number/Title: SCON 360.01 – Physiology of Exercise Prescription with the Athletic Populations

Credit Hours: 2

Class Time/Place: M-W; 10:00am-10:50am/Croy CCR

Prerequisites: HPE 308 and BIOL 202

Instructor: Lisa Klingshirn
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Office Hours: M-T-W-Th – 11:00am-12:00 noon and by appointment

Course Description This course will focus primarily on the application of the scientific methods involved in prescribing exercise/conditioning programs for various athletic populations. The areas of energy production, nutrition, body composition, periodization, and fitness testing will provide the coach/health professional with the knowledge to design scientifically based programs.

Relationship to the Conceptual Framework Students in this course are required to research a topic that addresses athletic performance. They will use the computer to design and implement a Power Point presentation on their topic. The course will address individual differences with respect to gender, body type, genetic make-up and apply that knowledge to various training programs for various individuals. This course presents concepts that will allow students to apply the principles of exercise physiology in prescribing exercise/conditioning programs for various athletic populations as used in the profession of strength and conditioning.

Course Objectives

1. To gain an understanding of the body's physiological systems important to the performance of exercise including the skeletal muscular, neural, and cardiorespiratory systems.
2. To gain an understanding of the body's energy systems used during various types of exercise.
3. To gain an understanding of the physiological principles that operate during various types of exercise.
2. To gain an understanding of the physiological adaptations that occur with chronic exercise.
3. To incorporate the above physiological principles into an exercise program to bring about beneficial adaptations specific to the goal of an individual athlete.
4. To gain an understanding of the principles of training and to apply them in the design of an exercise program that will enhance each of the components of physical fitness including muscular strength, muscular power, the stretch-shortening cycle, speed, agility, and aerobic endurance.
5. To gain an understanding of the various types of training methods used to enhance both the aerobic and anaerobic systems of the athlete.
6. To gain an understanding of the principles of periodization and the application of these principles to a comprehensive training program designed to enhance athletic performance.
7. To gain an understanding of various influences that affect training and performance such as thermoregulation, ergogenic aids, nutrition, and altitude training.
8. To communicate and present knowledge of the enhancement of athletic performance to others.

General Education Learning Outcomes Addressed

Goal 1. Students will take courses which expose them to a range of basic religious beliefs and diverse ethical perspectives and which encourage them to develop their own perspectives on global issues.	
Goal 2. Students will become familiar with the historical, scientific, literary, and/or philosophical content of a range of disciplines.	
Goal 3. Students will acquire and practice skills for reading, writing, speaking, listening, abstract inquiry, critical thinking, logical reasoning, and using computers and related technology.	X
Goal 4. Students will develop an appreciation for and means of analyzing art, literature, music, communication, science, and/or theatre.	X
Goal 5. Throughout their general education experience, students will analyze and reflect upon the challenges facing our global society as well as the importance of being a life-long learner and responsible citizen.	

**Required Textbooks
and other materials**

Essentials of Strength and Conditioning. 2nd Edition. Champaign, IL: Human Kinetics, 1999. Thomas R. Baechle & Roger W. Earle, Editors

Knowledge Base

Books:

Bompa, T.A., Theory and Methodology of Training. Dubuque, IA: Kendall/Hunt, 1983.

Fleck, S.J., and Kraemer, W.J., Designing Resistance Training Programs. 2nd Ed., Champaign, IL: Human Kinetics, 1997.

Howley, E. T. and Franks, D. B., Health Fitness Instructor's Handbook. Champaign, IL: Human Kinetics, 1997.

Powers, S.K., and Howley, E. T., Exercise Physiology: Theory and Application to Fitness and Performance. Dubuque, IA: Wm. C. Brown Publishers, 2001.

Wilmore, J.H. and Costill, D.L., Physiology of Sports and Exercise. Champaign, IL: Human Kinetics, 1994.

Internet Sites:

American College of Sports Medicine: <http://www.acsm.org>

Center for Disease Control and Prevention: <http://www.cdc.gov>

National Collegiate Athletic Association: <http://www.ncaa.org/>

National Library of Medicine: <http://www.nlm.nih.gov/>

National Strength and Conditioning Association: <http://www.nscf-lift.org/>

World Health Organization: <http://www.who.int/en/>

Instructional Strategies

Case Analysis		Library and Internet Research	X
Debate	X	Practice/drill	
Discovery/Independent Research	X	Problem solving	
Discussion/Questioning/Interviewing	X	Reading assignments	X
Experiential Learning		Role playing/simulation games	
Field Experience		Service Learning	
Group Presentation		Video/Audio Review and Critique	
Laboratory Experiences		Other – Individual Presentation	X
Lecture	X		

Methods of Assessment

Abstracts		Participation	
Attendance	X	Peer Evaluation	
Capstone Project		Portfolio	
Case Study		Portfolio Lab Performance	
Exams	X	Presentations	X
Group Projects		Professional Evaluation	
Homework Assignments	X	Quizzes	
Internet Research	X	Research project	
Journaling		Other – Training Program	X
Lab Performance			
Oral/written review of literature	X		

Grading

2 Tests (100 points each) - 200 points

Final Exam – 150 points

Comprehensive

Homework - 80 points

2 Projects (100 points each) - 200 points

(1) Training Program for a Specific Athlete

(2) Performance Paper (75 points) and Oral Presentation (25 points)

Grading Scale/Distribution	90-100%	A
	80-89%	B
	70-79%	C
	60-69%	D
	<60%	F

Honor Code *I will not knowingly engage in any dishonorable behavior, cheat, steal, lie or commit any act of plagiarism during my academic work, course, or endeavor. If I observe an act which I believe violates the University's Honor Code, I may, in my discretion, report it to the appropriate personnel.*

Course Policies and Practices Each student is permitted three absences without penalty. Five points will be deducted for each absence after the third missed class session.

Late assignments - Deduction of 1 point per day late, maximum of 50% of total points

Final Exam Date Final Exam date: Monday, December 8 – 12:00-1:50pm

Special Services If you are a student with a disability, it is your responsibility to register with the Office of Disability Service and notify your instructor one week prior to any needed service so that reasonable accommodations can be made for you.

Course and Instructor Evaluation Students will use the standard student evaluation form consistent with all of The University of Findlay procedures to evaluate this course.

Tentative Course Outline (Course outline is subject to change throughout the semester)

Aug. 25	Muscle Physiology	Chapter 1
Aug. 27	Neuromuscular Anatomy and Adaptations to Conditioning	Chapter 2
Sept. 1	LABOR DAY	
Sept. 3	Bone, Muscle, and Connective Tissue Adaptations	Chapter 4
Sept. 8	Bioenergetics of Exercise and Training	Chapter 5
Sept. 10	Bioenergetics of Exercise and Training	Chapter 5
Sept. 15	Cardiorespiratory Anatomy & Physiology: Responses to Exercise	Chapter 7
Sept. 17	Physiological Adaptations to Anaerobic and Aerobic Endurance	Chapter 8

Sept. 22	Training Programs Physiological Adaptations to Anaerobic and Aerobic Endurance Training Programs	Chapter 8
Sept. 24	TEST #1	Chapters 1, 2, 4, 5, 7, 8
Sept. 29	Resistance Training	Chapter 10
Oct. 1	Resistance Training; Plyometric Training	Chapter 10; Chapter 19
Oct. 6	Plyometric Training; Speed, Agility, and Speed-Endurance Development	Chapter 19; Chapter 20
Oct. 8	Aerobic Endurance Training	Chapter 21
Oct. 13	Training Variation: Periodization	Chapter 22
Oct. 15	Training Variation: Periodization	Chapter 22
Oct. 20	Training Variation: Periodization	Chapter 22
Oct. 22	TEST #2	
Oct. 27	Performance Enhancing Substances	Chapter 11 TRAINING PROGRAM DUE
Oct. 29	Performance Enhancing Substances; Nutritional Factors in Health and Performance	Chapter 11; Chapter 12
Nov. 3	Nutritional Factors in Health and Performance	Chapter 12
Nov. 5	ACADEMIC EXCELLENCE DAY	
Nov. 10	Class Presentations	
Nov. 12	Class Presentations	
Nov. 17	Class Presentations	
Nov. 19	Class Presentations	
Nov. 24	Instructor selected topics	
Nov. 26	THANKSGIVING BREAK	
Dec. 1	Instructor selected topics	
Dec. 3	Instructor selected topics	
Dec. 8	FINAL EXAM – 12:00-1:50pm	