COLLEGE OF EDUCATION

Conceptual Framework

Mission

The mission of the Auburn University College of Education is to build a better future for individuals, our state, our nation and our world. We fulfill our mission by preparing competent, committed and reflective professionals as we engage in outstanding teaching, cutting-edge research and meaningful outreach.

Vision

Our vision is one of transformation. We strive to be and prepare agents of change. We seek to establish and work collaboratively within socially responsive learning communities that value the mosaic of a diverse society. Our vision includes engaging in the continuous learning necessitated by a rapidly advancing world; identifying and addressing critical issues related to the education of all people; and using technology to broaden and support learning opportunities. Ours is a vision of change embracing the inclusive, collaborative and technological aspects of our mission, thereby establishing us as a college representing educational advocacy and innovation in the 21st century.

Philosophy, Purpose and Goals

Our philosophy of learning and teaching emphasizes that building a better future for all means creating learning environments for diverse learners that acknowledge the active, collaborative and ever-evolving nature of learning. This philosophy also values teaching that promotes the development of safe, stimulating learning communities enriched with diverse perspectives; is grounded in reasoned and purposeful decision making; and is enacted in proactive, flexible and self-regulating ways.

The keystone, the topmost stone of an arch, serves as a visual reminder of our mission and our goals. Just as the keystone supports and holds an arch together, education holds intact the promise of a better future for all. We believe that education is the keystone of opportunity and equity in a richly diverse, increasingly technological, and ever-changing world. It is the critical building block that enables individuals and societies to flourish in a global community.

Kinesiology
Course Syllabus

1. Course Number: KINE 5600/6600
Course Title: Physiological Basis of Training and Conditioning
Credit Hours: 3 semester hours (Lecture)
Prerequisite: HLHP 3680
Corequisite: None

2. Date Syllabus Prepared- December 2011

3. Text - Wilmore, Jack and David Costill (2004) Physiology of Sport and Exercise, 4th Edition, Wm. C. Brown Publishers .

4. Course Description
This course will introduce students to the physiological basis of training, conditioning, and adaptations. This will include the study of physiological responses to acute exercise, physiological adaptations to physical training, optimizing sport performance, special considerations, and detraining.

5. Course Objectives: The student will:
1. Demonstrate an understanding of the basic metabolic, circulatory, respiratory, muscular, and environmental responses to acute and chronic exercise.
2. Demonstrate an understanding of physiological adaptations that are associated with human physical activity and their influence upon performance.
3. Demonstrate an understanding various exercise training programs as it relates to physical activity and performance.
4. Demonstrate an understanding of training, overtraining, and detraining as it relates to physical performances.

6. Course Content
Week 1 Introduction to Exercise and Sport Physiology, Adaptations
Week 2 Fatigue
Week 3 Fatigue
Week 4 Metabolism and Energy Systems, Substrates
Week 5 Neuromuscular Activation
Week 6 Sport Specificity and Training Principles
Week 7 Training and Muscle Adaptations
Week 8 Detraining, Tapering
Weeks 9 Cardiorespiratory Training and Adaptations
Week 10 Spring Break
Week 11 Environmental Influences
Week 12 Gender and Performance
Weeks 13 Aging and Sport, Exercise, Performance
Week 14,15, 16 Coaches Lectures

7. Course Requirements

Students are required to complete designated readings in the course text, participate and complete a write up on the human performance assessment testing, and three written exams.

8. Grading and Evaluation Procedures

	Possible Pts.	Total Points
HLHP 5600		
Biographical sketch (2)	25	50
Coaches Corner (1)	25	25
Mid-Term	125	125
Final	150	150
	Semester Total	350
HLHP 6600		
Biographical sketch (3)	25	75
Review Outline (1)	25	25
Coaches Corner	25	25
Mid-Term	125	125
Final	150	150
	Semester Total	400

Grading Scale

A = 90%
B = 89 – 80%
C = 79 -70%
D = 69 - 60%
F < 60%

9. Class Policy Statement

The tests will cover material that is presented in the course text, lecture, and class discussions, testing experiences, and laboratory assignments.

Participation: Students are expected to participate in all class discussions and participate in all exercises. It is the student's responsibility to contact the instructor if assignment deadlines are not met and the students are responsible for initiating arrangements for missed work.

Attendance/Absences: If an exam is missed, a make-up exam will be given only for University-approved excuses as outlined in the Tiger Cub. Arrangement to take the make-up exam must be made in advance. Students who miss an exam because of illness need a doctor's statement for verification of sickness and should clear the absence with the instructor the day they return to class. Other unavoidable absences from campus must be documented and cleared with the instructor **in advance**.

Unannounced quizzes: There can be unannounced quizzes, point totals would be added to grading scale and percentages would dictate corresponding grade.

Cell Phone Use: There will be no cell phone use during class; this includes all forms of cell phone communications. Please turn your phone off or on mute during the class period.

Accommodations: Students who need special accommodations in class, as provided for by the American Disabilities Act, should arrange a confidential meeting with the instructor during office hours the first week of classes - or as soon as possible if accommodations are needed immediately. You must bring a copy of your Accommodation Memo and an Instructor Verification Form to the meeting. If you do not have these forms but need accommodations, make an appointment with the Program for Students with Disabilities, 1244 Haley Center, 844-2096

Honesty Code: The University Academic Honesty Code and the Tiger Cub Rules and Regulations pertaining to Cheating will apply to this class.

Professionalism: As faculty, staff, and students interact in professional settings, they are expected to demonstrate professional behaviors as defined in the College's conceptual framework. These professional commitments or dispositions are listed below:

- Engage in responsible and ethical professional practices
- Contribute to collaborative learning communities
- Demonstrate a commitment to diversity
- Model and nurture intellectual vitality

10. Justification for Graduate Credit

The content of this course is of sufficient depth and complexity to justify graduate credit;
The course material goes well beyond the introductory level and requires students to consider the complex responses associated with exercise and training, neuromuscular adaptations, and physiological responses. The prerequisite for this course is the Auburn University undergraduate course HLHP 3680 or equivalent. Students are required to analyze, explore, question, reconsider, and synthesize old and new knowledge and skills. Rigorous standards are applied to the evaluation of human performance testing write-ups, exams and class performance.

Article Reviews

Historical Perspectives- Choose 2

David B. Dill	Archibald V. Hill	August Krogh
Erik H. Christensen	Otto Meyerhoff	Sid Robinson
David L. Costill	Jack H. Wilmnore	John Holloszy
John S. Haldane	Peter Karpovich	Hans Krebs
Charles Tipton	Phil Gollnick	Erling Asmussen
Marvius Nielsen	Per Olaff Astrand	Bengt Saltin
Reggie Edgerton	Kenneth Cooper	Thomas K. Cureton
Christian Bohr	C.G. Douglas	L.J. Henderson
Elsworth R. Buskirk	Steven M. Horvath	Rudolpho Margaria
Peter Scholander	Dudley Sargent	Harvard Fatigue Lab
Karolinska Institute	August Krogh Institute	Bodil Nielsen
Barbara Drinkwater	Karne Piehl	Irma Rhyming
Brigetta Essen	Jean Hansen	Frank Booth
Ken Baldwin	George Brooks	John B. West
Arthur C. Guyton	Carl V. Gisolfi	Robert B. Armstrong
James D. Hardy	Jerome A Dempsey	Alan J. McComas
Loring B. Rowell	Brenda Bigland-Ritchie	Michael Foster

* Other great scientist-researchers or Research Labs from your area of interest.

For all bio-sketches, the student will provide a written sketch or review of the individual and a listing of the individual's major publications. The bio-sketch information should be referenced and you will provide a short bio-sketch to the class.

Topic Areas- Choose a topic area. These should be comprehensive review articles, not a single journal citation. The review cannot be the same topic area that you chose for your "coaches Corner" commentary.

Endurance Training Adaptations
Anaerobic Training Adaptations
Neural vs. Hypertrophic Adaptations
Strength /Resistance Training
Environmental Factors (Hold/Cold stressors, Hypobaric, Hyperbaric, Microgravity, Hydration)
Fuel (Carbohydrate, Fat, Protein, Ergogenic Aids)
Training, Detraining, Concurrent, Exercise regimens (CrossFit, P90X, RAW)
Subject (aging- old, young, gender)

The student will submit the title, author, and subject for all topic reviews. A clean copy of the review article is required. Accompanying the review article will be an outline that captures the critical issues, facts, and concepts of the paper.

All assignments must be approved prior to your submission and presentation on or before the due date. The material submitted to the professor must be typed and should be work representative of your graduate status.

KINE 6600 Schedule (Thursday 2:00-4:30 Lecture / Break/Presentations)

Week 1 January11 Intro to Exercise and Sport Physiology, Adaptations
Historical Bio-sketches Assigned
Lecture article: Blattetis and Fragley- Adaptations
Text Chapter 1

Week 2 January 18 Fatigue Overview
Lecture articles: McClaren: Metabolic and Physiologic Fatigue
Biosketches

Week 3 January 25 Fatigue
Lecture article: Fitts: Muscle Mechanics of Fatigue
Biosketches

Week 4 February 1 Metabolism and Energy Systems /Substrates/Anaerobic and Aerobic Training
Assigned Article- Pascoe and Gladden Muscle Glycogen Resynthesis after High Intensity Exercise
Text: Chapter 6
Biosketches
Anaerobic Training Adaptations review due February 8
Fuel (Carbohydrate, Fat, Protein, Ergogenic Aids) review due February 8

Southeast American College of Sports Medicine Meeting- Feb 3-5th, Greenville SC
(Can review an invited talk- Due February 8th)

Week 5 February 8 Neuromuscular Activation
Assigned article: Sale Neuromuscular Activation
Supplemental text: Chapter 2
Biosketches
Neural vs. Hypertrophic adaptations reviews due February 15

Week 6 February 15 Sport Specificity and Training Principles
Text Chapter 12
Biosketches

Week 7 February 22 Training and Muscle Adaptations
Lecture article: Lieber-Training adaptations
Coaches Corner
Endurance Training Adaptations review due March 1
Strength /Resistance Training review due March 1

Week 8 March 1 Detraining , Tapering
Lieber: Disuse and atrophy
Text: Chapter 12
Coaches Corner
Training, Detraining, Concurrent, Exercise regimens due April March 8

Week 9 March 8 Cardiorespiratory training and adaptations
Mid Term Testing period
Text: Chapter 9
Coaches Corner

Week 10 **March 14th-18th** **Spring Break**

Week 11 March 22 Environmental Influences on Performance
(Temperature, Altitude, Space, Underwater)
Text: Chapters 10, 11
Coaches Corner
Environmental Factors (Hold/Cold stressors, Hypobaric, Hyperbaric, Microgravity, Hydration) review due March 29

Week 12 March 29 Gender and Performance
Text Chapter 18
Coaches Corner

Week 13 April 5 Aging and Sport, Exercise, Performance
Text Chapters 16, 17, 18
Subject (aging- old, young, gender) review due April 12
Coaches Corner

Week 14 April 12 Coach talk/Coaches corner
Week 15 **April 19** Coach talk/coaches corner
Week 16 **April 26** Coach talk/coaches corner

Exam Period **May 2-6th**
Class Exam as scheduled