

LSC Use Only No:	LSC Action-Date:	UWUCC USE Only No.	UWUCC Action-Date:	Senate Action Date:
		08-901	AP-4/14/09	App-4/28/09

**Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee**

Contact Person Mark Sloniger	Email Address sloniger@iup.edu
Proposing Department/Unit Health and Physical Education	Phone 7-5508

Check all appropriate lines and complete information as requested. Use a separate cover sheet for each course proposal and for each program proposal.

<b>1. Course Proposals (check all that apply)</b> <input checked="" type="checkbox"/> New Course <input type="checkbox"/> Course Prefix Change <input type="checkbox"/> Course Deletion <input type="checkbox"/> Course Revision <input type="checkbox"/> Course Number and/or Title Change <input type="checkbox"/> Catalog Description Change	
<hr/> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"><i>Current Course prefix, number and full title</i></div> <div style="width: 45%;"><i>Proposed course prefix, number and full title, if changing</i></div> </div> <hr/>	
<b>2. Additional Course Designations: check if appropriate</b> <input type="checkbox"/> This course is also proposed as a Liberal Studies Course. <input type="checkbox"/> Other: (e.g., Women's Studies, Pan-African) <input type="checkbox"/> This course is also proposed as an Honors College Course.	
<b>3. Program Proposals</b> <input type="checkbox"/> New Degree Program <input type="checkbox"/> Program Title Change <input type="checkbox"/> Other <input type="checkbox"/> New Minor Program <input type="checkbox"/> New Track <input type="checkbox"/> Catalog Description Change <input type="checkbox"/> Program Revision	
<hr/> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"><i>Current program name</i></div> <div style="width: 45%;"><i>Proposed program name, if changing</i></div> </div> <hr/>	
<b>4. Approvals</b>	
Department Curriculum Committee	Date
Chair(s)	
Department Chair(s)	<i>Signatures on 08-90a</i>
College Curriculum Committee Chair	
College Dean	
Director of Liberal Studies *	
Director of Honors College *	
Provost *	
Additional signatures as appropriate: (include title)	
UWUCC Co-Chairs	<i>Gail Schriest</i> <i>4-14-09</i>

\* where applicable

APR 02 2009

Liberal Studies

## SYLLABUS OF RECORD

### HPED 347 Physiology of Exercise Laboratory

**0 class hours**  
**2 lab hours**  
**1 credit**

**Co-Requisite: HPED 343**

**0c-2l-1cr**

Laboratory experiences designed to illustrate physiological responses to exercise. Skills associated with the use of current laboratory equipment and techniques are developed. This course will supplement lecture-based content from HPED 343, Physiology of Exercise.

Co-Requisites: Taken concurrently with HPED 343

### II. Course Outcomes:

Students will be able to:

1. Demonstrate knowledge of equipment and techniques commonly utilized in an Exercise Physiology Laboratory such as measures of anaerobic and aerobic power.
2. Observe physiological responses of the cardiovascular, pulmonary and metabolic systems to various modes of exercise.
3. Demonstrate knowledge and apply to basic laboratory skills including critical thinking, equipment calibration, data collection and computerized statistical analysis procedures.
4. Participate and discuss responses of various physiological systems under a variety of environmental conditions such as heat, cold, humidity and wind.
5. Utilize concepts in Exercise Physiology taught in lectured –based settings and apply to practical-based, student centered activities.

### III. Course Outline

- |    |  |            |
|----|--|------------|
| A. | Introduction to Ergometry and Environmental Measures                                   |            |
|    | 1. Background regarding calibration and correct use of cycle ergometer                 | ( 4 hours) |
|    | 2. Effects of various environmental conditions   |            |
| B. | Heart Rate and Blood Pressure Responses to Exercise                                    | ( 3 hours) |
|    | 1. Palpation of peripheral pulses, use of heart rate monitors, resting blood pressures |            |
|    | 2. Exercise heart rates and blood pressure   |            |
| C. | Muscular Strength, Endurance and Fatigue   | ( 4 hours) |
|    | 1. Measurement of muscular strength, endurance and fatigue                             |            |

2. Measurement of muscular strength, endurance and fatigue under various environmental conditions
- D. Pulmonary Measures and Responses to Exercise (2 hours)  
 1. Resting pulmonary function measures  
 2. Exercise pulmonary function
- E. Resting and Submaximal Energy Expenditure (2 hours)  
 1. Resting energy expenditure  
 2. Submaximal exercise protocols
- F. Oxygen Deficit and Debt (3 hours)  
 1. Oxygen deficit  
 2. Oxygen debt
- G. Maximal Oxygen Uptake (3 hours)  
 1. Measurement of maximal oxygen consumption  
 2. Influence of gender/conditioning on maximal oxygen consumption
- H. Anaerobic Power and Capacity (2 hours)  
 1. Anaerobic power tests  
 2. Wingate Test
- I. Lactate and Ventilatory Thresholds (2 hours)  
 1. Assessment of lactate and ventilatory threshold  
 2. Measurement of lactate and ventilator threshold.
- J. Responses to Exercise in the Heat (2 hours)  
 1. Evaluation of aerobic power responses to hyperthermia  
 2. Evaluation of aerobic power responses to hypothermia
- K. Final Exam- during Final Exam Week (2 hours)

#### **IV. Evaluation Methods**

*Evaluation of the student will consist of:*

10% Students will be assigned points throughout the semester for lab participation and the ability to answer questions regarding the current laboratory assignment.

50% Students will be required to work cooperatively to complete laboratory assignments. Professional lab write-ups are required which may include tables, graphs, calculations and applied discussion questions.

30% There will be four quizzes throughout the semester which will evaluate course content on various topics covered in exercise

physiology.

10% Students will be required to develop their own research question and subsequent activity based laboratory. Students will propose the purpose, materials and lab methods.

## V. Example Grading Scale

A  $\geq$  90% B: 80% to 89% C: 70% to 79% D: 60 % to 69% F: < 60%

## VI. Undergraduate Course Attendance Policy

The University expects all students to attend class. Attendance will be taken every class. University policy recognizes the need to miss class because of illness or personal emergencies. Students will be allowed total excused absences equivalent to the number class credit hours. Only students with an excused absence will be allowed to make up any missed work. Unexcused absences on exam days will result in a zero score for the exam or quiz. Students with excused absences will be given a separate exam.

## VII. Required Text

Lab Manual

Plowman, S. and Smith, D., (2007) Exercise Physiology for Health, Fitness, and Performance. 2<sup>nd</sup> Edition, Baltimore, MD: Lippincott, Williams & Wilkins.

## VIII. Special Resource Requirements

Human Performance Laboratory, Department of Health and Physical Education

## IX. Bibliography

Adams, G. (2002). Exercise Physiology Laboratory Manual, New York, NY: McGraw Hill.

Maud, J.P., & Foster, C. (2006). Physiological Assessment of Human Fitness, 2<sup>nd</sup> Edition, Champaign, IL: Human Kinetics.

Roitman, L.J., (2005). ACSM's Resource Manual for Guidelines for Exercise Testing and Prescription, 3<sup>rd</sup> Edition, Baltimore, MD: Lippincott, Williams & Wilkins.

Tipton, M.C. (2006). ACSM's Advanced Exercise Physiology, Baltimore, MD: Lippincott, Williams & Wilkins.

### Professional Journals:

Medicine Science in Sport and Exercise, Lippincott, Williams & Wilkins

The Journal of Applied Physiology, The American Physiological Society.

The Journal of Strength and Conditioning, Lippincott, Williams & Wilkins.

## Course Analysis Questionnaire

### A. Details of the Course

- A1. This course is required for students in the Exercise Science Track within the Health, Physical Education and Sport Program. Students must enroll in this course during the semester that they are enrolled in HPED 343 Exercise Physiology. This course is not intended to be a Liberal Studies course.
- A2. This course does not require changes in any other course in the department. A program revision of the BS in Exercise Science – Health Physical Education and Sport Program will include this course among the core courses.
- A3. This course has been offered as HPED 481 in Spring, 2008. Forty students were enrolled in Spring, 2008.
- A4. This course is not intended to be dual level.
- A5. This course is not to be taken for variable credit.
- A6. Similar courses are offered at the following institutions, among others:

University of Pittsburgh: Advanced Exercise Physiology Lab  
Slippery Rock University: Clinical Exercise Physiology  
Pennsylvania State University: Laboratory Experience in Physical Fitness Assessment

- A7. CAAHEP recommends or requires the content or skills of this proposed course.

### B. Interdisciplinary Implications

- B1. This course will be taught by one instructor.
- B2. The content of this course does not overlap with any other at the University.
- B3. This course is not cross-listed.
- B4. This course will not be offered to students in the School of Continuing Education

### C. Implementation

- C1. No new faculty member is required to teach this course. It can be taught by a variety of Exercise Science faculty members.
- C2. Other resources:
  - a. Current space allocations are adequate to offer this course.
  - b. Equipment needed for this course is currently found in the Human Performance Laboratory housed in Zink Hall.
  - c. Laboratory supplies are necessary for this course.
  - d. Library holdings are adequate.
  - e. The course will not include field trips.

C3. The resources for this course are not funded by a grant.

C4. This course will be offered each year during Fall and Spring semesters.

C5. One section will be offered at a time.

C6. Approximately 30 Exercise Science Track students are enrolled in HPED 343 Exercise Physiology per semester. The facility and available equipment are sufficient to accommodate this number of students.

C7. No professional society recommends enrollment limits or parameters for this course.

C8. This course does not involve the use of distance education.

**D. Miscellaneous**

No additional information is necessary.

Part III. Letters of Acknowledgement  
(None)