

COURSE IMPLEMENTATION DATE: (January 2002)
COURSE REVISED IMPLEMENTATION DATE: ()
COURSE TO BE REVIEWED: Jan 2006
(Four years after implementation date)

OFFICIAL COURSE OUTLINE INFORMATION

Students are advised to keep course outlines in personal files for future use.

Shaded headings are subject to change at the discretion of the department and material will vary
see course syllabus available from instructor

FACULTY/DEPARTMENT: KINESIOLOGY AND PHYSICAL EDUCATION
COURSE NAME/NUMBER: KPE 363 FORMER COURSE NUMBER: 3 UCFV CREDITS: 3

LAB-BASED EXERCISE PHYSIOLOGY

COURSE DESCRIPTIVE TITLE

CALENDAR DESCRIPTION:

This is a lab-based course dealing with laboratory-based measurement of the functional capacity of the various physiological systems, including the muscular, cardiovascular, respiratory, and nervous systems.

PREREQUISITES: KPE 362

COREQUISITES:

SYNONYMOUS COURSE(S)

(a) Replaces: N/A
(Course #)
(b) Cannot take: N/A for further credit
(Course #)

SERVICE COURSE TO:

N/A
(Department / Program)
N/A
(Department / Program)

TOTAL HOURS PER TERM: 45

STRUCTURE OF HOURS:

Lectures: _____ hrs.
Seminar: _____ hrs.
Laboratory: 45 hrs.
Field Experience: _____ hrs.
Student Directed Learning: _____ hrs.
Other (Specify): _____ hrs.

TRAINING DAY-BASED INSTRUCTION

LENGTH OF COURSE: N/A
HOURS PER DAY: N/A

MAXIMUM ENROLMENT: 36

EXPECTED FREQUENCY OF COURSE OFFERING: Once/year

WILL TRANSFER CREDIT BE REQUESTED? (Lower-level courses only)

YES _____ NO X

WILL TRANSFER CREDIT BE REQUESTED? (Upper-level requested by department)

YES X NO _____

TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE

YES _____ NO X

AUTHORIZATION SIGNATURES:

Course designer(s): G. Anderson

Chairperson: _____
(Curriculum Committee)

Department Head: C. Chamberlin

Dean: J. Snodgrass

PAC Approval in Principle Date: _____

PAC Final Approval Date: _____

KPE 363

COURSE NAME / NUMBER

LEARNING OBJECTIVES / GOALS / OUTCOMES / LEARNING OUTCOMES:

- Introduce students to data collection methods in Kinesiology
- Introduce students to electronic data collection and electronic signals
- understand the theory of signal conversion to meaningful physiological variables
- be able to set up, calibrate, and collect EMB data
- be able to set up, calibrate, and collect ECG data
- be able to set up, calibrate, and collect pulmonary data, and understand the effects of exercise
- be able collect arterial blood pressure data at rest and during exercise, understanding postural effects
- be able to set up, calibrate, and collect gas analysis data to determine maximal aerobic power

METHODS:

- lab
- lecture

PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):

Credit can be awarded for this course through PLAR

YES _____

NO X **METHODS OF OBTAINING PLAR:**

N/A

TEXTBOOKS, REFERENCES, MATERIALS:

(Textbook selection varies by Instructor. An example of texts for this course might be:)

- Course Pack

SUPPLIES / MATERIALS:

N/A

STUDENT EVALUATION:

(An example of student evaluation for this course might be:)

- | | | |
|-----------------------|----------|-----|
| a. 5 mini-lab reports | 4% each | 20% |
| b. 5 full lab reports | 10% each | 50% |
| c. Final exam | | 30% |

KPE 363

COURSE NAME / NUMBER

COURSE CONTENT:

Course content varies by instructor. An example of course content might be:

1. Biometrics

- a. instrument range, sensitivity, linearity, hysteresis, frequency response
- b. signal-to-noise ratio
- c. basic electricity and safety measures
- d. computer data collection, signal input and A/D conversion

2. Oscilloscopes and Stimulators (Nerve Conduction)

- a. oscilloscopes
- b. stimulators
- c. measuring action potential velocities

3. EMG

- a. Electrodes
- b. Recording muscle potentials
- c. Scaling of data
- d. Data collection of sit-up vs curl-up protocols

4. ECG

- a. Three vs 12 lead ECG's
- b. R-R interval frequency
- c. Major ECG signs

5. Pulmonary Volumes and Capacities

- a. Measuring static volumes
- b. Measuring dynamic volumes
- c. Scaling of data

6. Pulmonary Function

- a. Pulmonary response to exercise
- b. Changes in dynamic measures
- c. Measuring flow

7. Arterial Blood Pressure

- a. Measurement techniques
- b. Orthostatic effects
- c. Exercise effects

8. Maximal Aerobic Power

- a. Metabolic equations
- b. Use of a metabolic cart
 - i. Calibration
 - ii. Theory
- c. Differences VO₂ values with different exercise modes
- d. Scaling of data