

**ASSESSMENT REPORT  
FOR****Physical Education and  
Recreation**

(Instructional Degree Program)

Aug. 2005 to Oct 2006

(Assessment Period Covered)

**Bachelor Degrees: Physical  
Education Exercise Science  
Emphasis**

(Degree Level)

Sept, 2005

(Date Submitted)

*Revised Report***Mission Linkage:**

UVSC Mission Reference: From the Institutional Mission: "We are deeply committed to the success of each student associated with Utah Valley State College. We value our students as our major focus and first priority. We foster this value through support of vigorous academic programs, vibrant student support and extracurricular programs and vital student governance and voice. We respect their diverse life experiences, encourage their individual professional development and appreciate their contributions to our campus and community. We value a philosophy of lifelong learning and scholarship for our students, faculty and staff. We foster this philosophy through a broad array of academic, professional and experiential learning opportunities that emphasize quality teaching, learning and scholarship."

Goals (refer to Strategic Plan): We will encourage active, experiential learning to engage students in learning and help students develop critical thinking and problem solving skills that support the understanding, application, and relevant key concepts and ideas in their respective disciplines.

**Intended Educational (Student) Outcomes:**

1. Graduates will be proficient in critical thinking and problem solving.
2. Fifty (50) percent of students will graduate in four (4) years.
3. Students will express satisfaction with opportunities for experiential and applied learning through service-learning and internship opportunities throughout the program.
4. Graduates will be proficient in applied skills that support professional competencies.

# ASSESSMENT REPORT FOR

## Physical Education and Recreation

(Instructional Degree Program)

Nov 2004 to Oct 2006

(Assessment Period Covered)

## BS/BA: Physical Education Exercise Science Emphasis

(Degree Level)

Sept. 2005

(Date Submitted)

### Intended Educational (Student) Outcome:

*Note: There should be one form C for each intended outcome listed on form B. The intended outcome should be restated in the box immediately below and the intended outcome number entered in the blank spaces.*

1.

Graduates will be proficient in critical thinking and problems solving.

### First Means of Assessment for Outcome Identified Above:

#### 1a. a. Means of Program Assessment & Criteria for Success:

Students will complete coursework in the areas of personal fitness, sports skills, exercise science, foundations of physical education, and physical education pedagogy.

In lieu of a standardized exam for the discipline, students will complete several exams as they near completion of the degree. The exams have been designed to assess integrative abilities relative to knowledge, critical thinking skills, and problem solving skills as they relate to each discipline. Key questions on each exam have been identified as tests for quantitative skills in critical thinking and problem solving. In addition, students will complete a survey that queries their opinions on their own abilities and the effectiveness of the courses in promoting critical thinking and problem solving skill development.

These exams and questionnaires will be administered in the PES 2700, PES 3500, PES 3850, PES 3700 and PES 4000 courses (upper-division courses for the BA/BS degree) at the end of each semester.

Criteria for success will be that 70% of these students score at least to the 75% level on the exams and an average score of 3.5 or greater is achieved on items 1 and 2 of the survey (score 1 = poor; score 5 = excellent; 3.5 = better than average, see below).

#### a. Summary of Assessment Data Collected:

The 4-year degree in Physical Education with an emphasis in Exercise Science was implemented in the fall of 2005. Students have entered the degree from several levels. The highest level of students currently enrolled in the program are 3<sup>rd</sup> year students. The questionnaire was administered in PES 2700, PES 3500, PES 3850, and PES 3700. The exams were administered in upper-division courses PES 3500, PES 3850, and PES 3700 (PES 4000 is currently being taught and students will be evaluated at the end of the spring 06 semester). Average scores for survey items 1 and 2 (see below) were 4.1 and 4.0, respectively, exceeding 3.5, indicating success for these criteria.

Greater than 70% (84% of PE 3700, 72% of PE 3500, and 95% of PE 3850) of students evaluated scored 75% or better on the exam administered in the 3 classes indicating success for these criteria. In addition, survey scores for items 1 and 2 averaged 4.1 and 4.0, (> the 3.5 success criterion) respectively suggesting that students had developed effective critical thinking and problem solving skills by the 3<sup>rd</sup> year of their program.

Data:

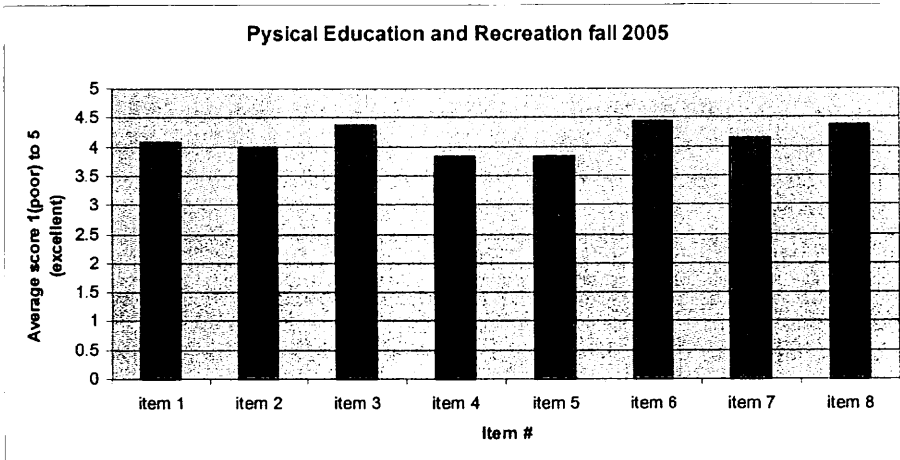
Questionnaire items

Fall 2005 PE/Pec survey for student outcomes.

All responses were scaled from 1-5, where 1 = poor; 5 = excellent

1. This class helped me develop my critical thinking and problem solving skills.
2. I believe the strength of my own critical thinking and problem solving skills is:
3. This class helped prepare me for my profession in PE/Rec.
4. This class helped me develop my applied and/or lab skills.
5. The quality of my applied or lab skills is currently:
6. I am satisfied with my experiences in the PE/Rec department.
7. I am satisfied with the program/curriculum offered through the PE/Rec department.
8. I found the program advising to be helpful.

Summary of questionnaire results: N ~ 110



Exam Results:

PE 3850	% score	PE 3700	% score	PE 3500	% score
81	90.0	188	94	82	82
82	91.1	198	99	71	71
75	83.3	172.5	86.25	89	89
79	87.8	188	94	76	76
82	91.1	169	84.5	84	84
83	92.2	165	82.5	91	91
70	77.8	185	92.5	82	82
73	81.1	157	78.5	84	84
48	53.3	186	93	84	84
87	96.7	186.5	93.25	60	60
80	88.9	127	63.5	87	87
72	80.0	187	93.5	96	96
78.5	87.2	121	60.5	69	69
81	90.0			47	47
			success = 11/13 or 84.6%		
68	75.6			76	76
66	73.3			76	76
81	90.0			80	80
72	80.0			67	67
87	96.7			82	82
76	84.4			62	62

81	90.0			71	71
71	78.9			84	84
	success = 21/22 or 95%				
				82	82
				76	76
				78	78
				40	40
				80	80
				80	80
				80	80

success  
 = 21/29  
 = 72%

Analytical skills:

**Department of Physical Education  
Exercise Science Emphasis**

Feedback on student math skills (1/4/06)

**46 of 59 students answered correctly or 78%**

The following math skills are necessary for PES 3700 (Exercise Physiology) and PES 4000 (Exercise testing and Prescription): all skills through algebra

Summarized here are data regarding math problems from exams administered during the fall 05 semester in a sophomore/junior level class, and a junior/senior advanced level class.

Sample of representative math problem for PES 3270 (sophomore/junior level class).

1. A subject walking on the treadmill at 75 meter/minute and a .05 grade has a relative VO<sub>2</sub> of:
  - a. 3.5 ml/kg/min
  - b. 10 ml/kg/min
  - c. 17.75 ml/kg/min
  - d. 40 ml/kg/min
  - e. 75 ml/kg/min

**The student must know and use the following formula:  
 $VO_2 = (.1 \times \text{speed}) + (1.8 \times \text{speed} \times \text{grade}) + 3.5$**

**Correct = 18**

**Incorrect = 1**

**94.7% of students answered correctly**

2. 5 pts. If he weighs 70 kg and runs on the treadmill at 150 meters/min and a grade of 3% (.03 slope), what is his VO<sub>2</sub> per minute in ml/kg/min? where: VO<sub>2</sub>
 $(\text{ml/kg/min}) = (.2 \times \text{speed in meters/min}) + (.9 \times \text{speed} \times \text{grade}) + 3.5$ 
  - a. 2 pts. How many METs is that? \_\_\_\_\_
  - b. 2 pts. What is his absolute VO<sub>2</sub> in l/minute? \_\_\_\_\_
  - c. 2 pts. What is his kcal output each minute? \_\_\_\_\_
  - d. 1 pts. How many kcals does he burn in 30 minutes? \_\_\_\_\_

Solution:  $VO_2 = (.2 \times 150) + (.9 \times 150 \times .03) + 3.5 = 30 + 4.05 + 3.5 = 37.55 \text{ ml/kg/min}$

a.  $1 \text{ MET} = 3.5 \text{ ml/kg/min}$

$$37.55 \text{ ml/kg/min} / 3.5 \text{ ml/kg/min} = 10.73 \text{ METS}$$

b. absolute  $VO_2 = \text{liters/min}$ , therefore, the student must convert  $37.55 \text{ ml/kg/min}$  to

liters/min given the subject's weight =  $37.55 \text{ ml/kg/min} / 1000 \text{ ml/liter} =$

$$.03755 \times 70 = 2.63 \text{ L/min}$$

c/d.  $1 \text{ L of } O_2 \text{ consumed} = 5 \text{ kcals}$  so  $2.63 \text{ L/min} \times 5 \text{ kcals/l} = 13.14 \text{ kcals/min} \times 30 = 394.3 \text{ kcals}$

**Correct = 13**

**Incorrect = 6**

**68% of students answered correctly**

Sample of representative math problem for PES 3700 (Junior/Senior level class).

Jane weighs 110 lbs and has a maximal oxygen uptake capacity of 3.0 liters. Tammy weighs 90 lbs and has a maximal oxygen uptake capacity of 2.7 liters. Who has the highest "relative (ml/kg/min)"  $VO_2$  max?

Tammy

Jane

Neither, they are the same

**Correct = 9**

**Incorrect = 4**

**9 of 13 correct = 69.2%**

a cyclist in a lab pedaling at 2 kp and 60 rpm on a Monark ergometer (the flywheel travels 6 meters per revolution) is working at \_\_\_\_\_ kpm. (students must know distance = 6 meters per revolution)

300 kpm

600 kpm

720 kpm

940 kpm

none of the above

**13 of 13 correct = 100%**

**Similar questions would be relevant to PES 4000. Spring 2006 is the first semester for the course**

**b. Use of Results to Improve Instructional Program:**

Based on the results summarized above, we will continue to emphasize critical thinking and problem solving skills over the course of the PE curriculum. We will continue to focus on the development of these skill sets by focusing on critical thinking and problem solving skill development and promoting comprehensive educational experiences across the curriculum. We will also continue to correspond and share evaluation information with other departments (i.e., English and Math) to help students develop comprehensive skills across their educational experiences in GE and discipline-specific courses.

yrs to grad BA/BS	4.00	4.00	4.00	4.00	4.00	4.00	5.00	4.50	4.00	4.00	4.50		5.00	4.00	4.50	5.00
yrs to grad BA/BS	4.00	5.00	4.00	4.50	4.30	4.00	5.00									
% 4 years to grad				12/21 or 59%												

**b. Use of Results to Improve Instructional Program:**

Based on the results summarized above, we believe most students entering the degree as freshman or sophomores can complete the degree in 4 years; however, we have lobbied for a full-time department advisor. This position is slated to be provided by fall 06. In addition, we are considering placing a block on registration for freshman and sophomore majors that will be lifted each semester prior to registering for the following semester after the student has met with the department advisor to facilitate effective program design to promote timely completion of the degree for most students.

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2.

50% of students will graduate in 4 years.

### First Means of Assessment for Outcome Identified Above:

2 a.

Assessment of "timely completion of this degree in Physical Education will be provided through analysis of graduation statistics from the graduate office and through exit questionnaires (as they are ready for graduation) that probe students' responses to questions related to the time it took them to complete the program, factors that were helpful, and what barriers they encountered. Because we have no graduates until spring 06, a survey was used to assess progress towards graduation for this assessment round.

Criteria for success will be that 50 % of students complete the degree in 4 years and to develop strategies to promote timely program completion.

#### a. Summary of Assessment Data Collected:

The 4-year PE - Ex Sci. emphasis degree was launched in fall 05, therefore we have 0 graduates at this time. Students are entering into the program as freshman, sophomores, and juniors. Despite ongoing advising efforts, many students have needed to pick up several GE courses (and others) to move towards completion of the degree. Many of the students entering the degree, particularly those entering as juniors, will take more than 4 years to complete the degree. Data collected indicate that BA/BS (average of all levels completing surveys) students will complete the degree in an average of 4.5 years, with 41.7% indicating that they will be able to complete the degree in 4 years or less. Lower division courses surveyed indicate that freshman/sophomore level students will complete the degree in an average of 4.32 years, with 59% indicating that they will complete the degree in 4 years or less.

Data: average for all PE students

average time to graduate
(years)
4.50

Percent in 4 yrs = 41.7%

Averages for PE 2700: freshman and sophomore level

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3.  
Students will express satisfaction with opportunities for experiential learning and applied learning through service-learning and internship opportunities provided throughout the program.

### First Means of Assessment for Outcome Identified Above:

3 a.  
Assessment of satisfaction will be provided through analysis of exit questionnaires that probe students' responses to questions related to satisfaction with opportunities for experiential learning and applied learning through service-learning and internship opportunities provided throughout the program.

Criteria for success will be when students express moderate or better satisfaction (Likert scale 3.5 or higher).

#### a. Summary of Assessment Data Collected:

Items 6 – 7:

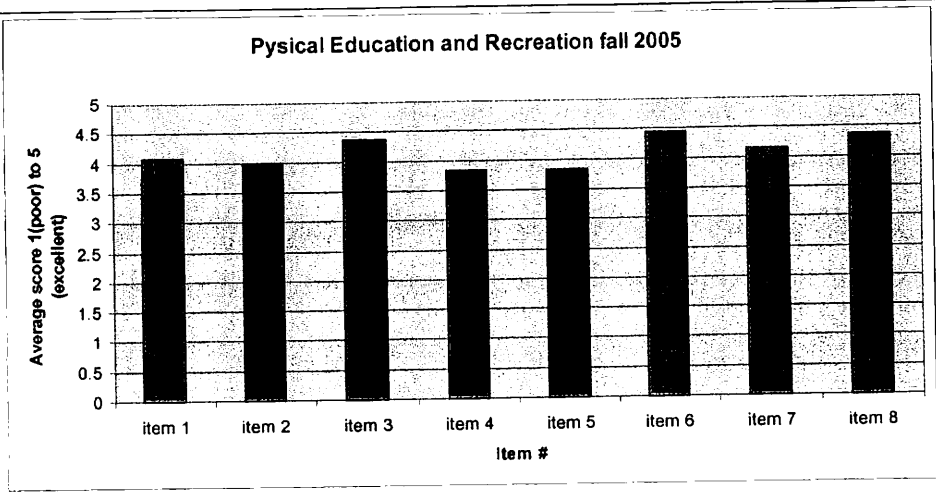
6. I am satisfied with my experiences in the PE/Rec department.

7. I am satisfied with the program/curriculum offered through the PE/Rec department.

queried students' opinions on satisfaction levels as they related to experiential and applied learning opportunities encountered over the course of the curriculum. All levels of students were surveyed (PES 2700, 3270, 3500, 3750, and 3850). Data indicate that students responded with an average score of 4.4, and 4.2 for items 6-7, respectively. This indicates success with regard to these criteria.

Average Scores PE      N ~  
                                         110

item 1	4.1
item 2	4
item 3	4.4
item 4	3.8
item 5	3.8
item 6	4.4
item 7	4.2
item 8	4.4



**b. Use of Results to Improve Instructional Program:**

Based on the results summarized above, we will continue to emphasize applied leaning learning and applied skills in the curriculum. Internship opportunities have been developed in conjunction with the internship office on campus and opportunities are ready as students as they approach their upper-division course work and indicate interest in internship opportunities which are provided through our R-482 course. The internship course will become available to exercise science students in fall 06.

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4.

Graduates will be proficient in applied skills that support professional competencies.

### First Means of Assessment for Outcome Identified Above:

4 a.

Assessment of applied skills will take place through practicum exams that assess student skills in PES 3700 (Exercise Physiology) and PES 4000 (Exercise Testing and Prescription) and through the use of questionnaire that query students' opinions about the development and competency level of their own skills

Criteria for success will be that 80% of students score 80% or higher on the practicum exams and scores of  $\geq 3.5$  on items 4 and 5 of the survey (see below for clarification).

#### b. Summary of Assessment Data Collected:

Students enrolled in the Exercise Science BA/BS program undergo practicum skill evaluation in the 3700 and 4000 classes. Data were gathered for this report from the 3700 class as the 4000 class will not be evaluated until April 2006.

Practicum: assessment of cardiopulmonary variables at rest and during submaximal exercise; equipment calibration; competency in equipment use:

Summary of scores: 100% scored > 80% indicating criteria success

Practicum	% score
40	N=13
40	100
39	97.5
40	100
40	100
38	95
40	100
40	100
40	100
40	100
40	100
39	97.5
36	90
39	97.5
38	95

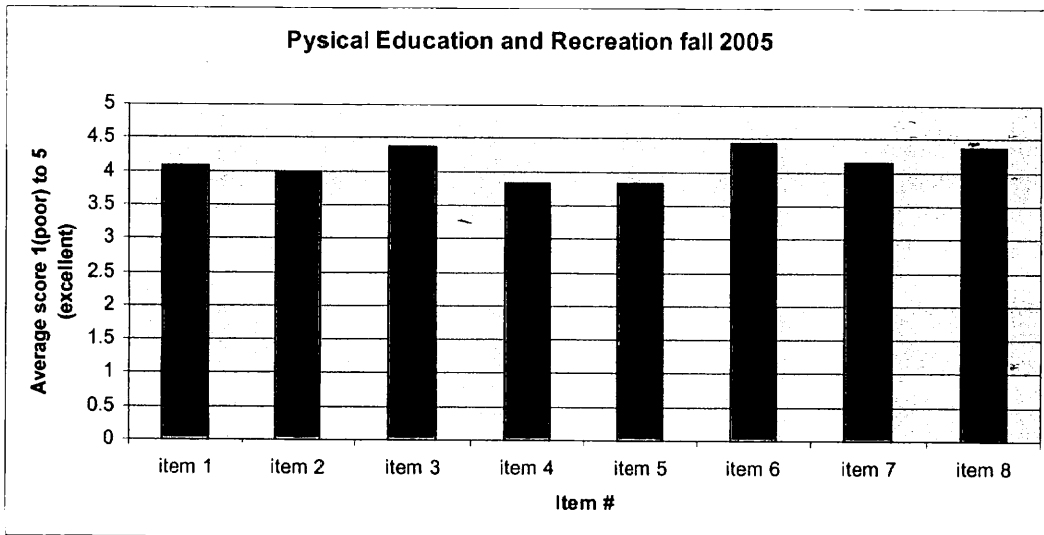
The questionnaire administered in PES 2700, 3270, 3500, 3700, and 3850 indicated that students scored items 4 and 5:

- 4. This class helped me develop my applied and/or lab skills.
- 5. The quality of my applied or lab skills is currently:

with an average score of 3.8 and 3.8, respectively indicating success for this criterion

Average Scores N ~  
110

item 1			4.1
item 2			4
item 3			4.4
item 4			3.8
item 5			3.8
item 6			4.4
item 7			4.2
item 8			4.4



**Use of Results to Improve Instructional Program:**

The curriculum was designed to be applied and skill-based. We believe the curriculum design has been effective for skill development and we will continue to emphasize skill acquisition and professional certification pursuits across the curriculum. We have modified the PE 4000 class to allow students to meet for 1 hour of lab time in place of classroom time during 4 class meetings each semester to encourage development of practical skills in exercise testing and prescription.