

Annual Program Report Narrative

Academic year: 2007-08

Department/Program: **HESS/Exercise Science**

Degree program(s): **B.S.**

Person(s) preparing report: Robert Robergs

Date submitted: November 25, 2008

1. List the student learning outcomes (SLOs) that were assessed during the academic year, including those for which data were gathered as well as those for which developmental work was done, such as the creation or piloting of assessment measures.

See attached Assessment Grid.

2. For each learning outcome, describe a) the measures used (at least one-half of the measures used are to be direct measures, and at least one direct measure must be used for each SLO), b) the sample of students from whom data were collected, c) the timetable for the collection, and d) the setting in which the measures were administered.

See attached Assessment Grid.

3. Describe the results of the assessment. (What do they tell you about student learning? What did you learn about strengths and weaknesses of your program?) If specific results are not available, describe the progress that has been made on the initiatives included in the approved assessment plan.

Program Goals

The goals of the exercise science program are to;

1. *educate our students in the advanced knowledge base of exercise science/physiology and all of it's applications (exercise prescription, body composition, exercise testing, fitness development and assessment, environmental physiology, and clinical applications).*
2. *teach and allow practice of skills in all aspects (applied and clinical) of exercise and applied human physiology laboratory testing.*
3. *nurture the development of professional skills and an ethical philosophy of professional practice.*

Student Learning Objectives

It is difficult, if not impossible, to separate the three goals from each other within the program functions. However, we propose that we can assess each area as explained in the sections to follow, categorized by Point in Program (PIP) 1, 2, and 3. We want to emphasize that while we assess student learning in all our classes, we have not yet developed course-based assessments..

4. Describe the departmental process by which faculty reviewed the assessment procedures and results and decided on the actions and/or revisions that were indicated by them.

The CARC develops systems to document assessment to ensure consistency in reporting across the COE. Assessment data are entered into the COEAS by program coordinators. This system generates reports by semester and type of assessment. Program coordinators share these data with their program faculty. Program faculty then discuss the results of the assessments and how they inform faculty about their students' learning. Faculty also examine what the results indicate about the effectiveness of the program overall. Finally the faculty consider whether the assessment method does accurately and effectively evaluate SLOs and program goals. Changes in program procedures, instruction, and assessment may result from a discussion of results. Programs report and discuss results of their assessments at Department Meetings. Department Chairs then share the results of assessment at the College level. The CARC meets regularly to examine college-wide assessment procedures. The chair of CARC and the Associate Dean in charge of assessment meet with Departments and programs to help evaluate and develop ongoing assessment systems that are manageable, effective, and meaningful.

5. Describe the actions and/or revisions that were implemented in response to the assessment processes and results.

PIP1: Entrance Assessment

The field of exercise science/physiology is based on basic science preparation, from which application of these scientific principles and academic content is used to explore the scientific inquiry and study of how exercise influences the human body. As such, it is important to provide entrance assessment of students to the Exercise Science Program based on how they have progressed through the science components of the core curriculum they study during their freshman and sophomore years. The course progression for the Exercise Science degree, emphasizing key scientific pre-requisite courses is presented in Figure 1.

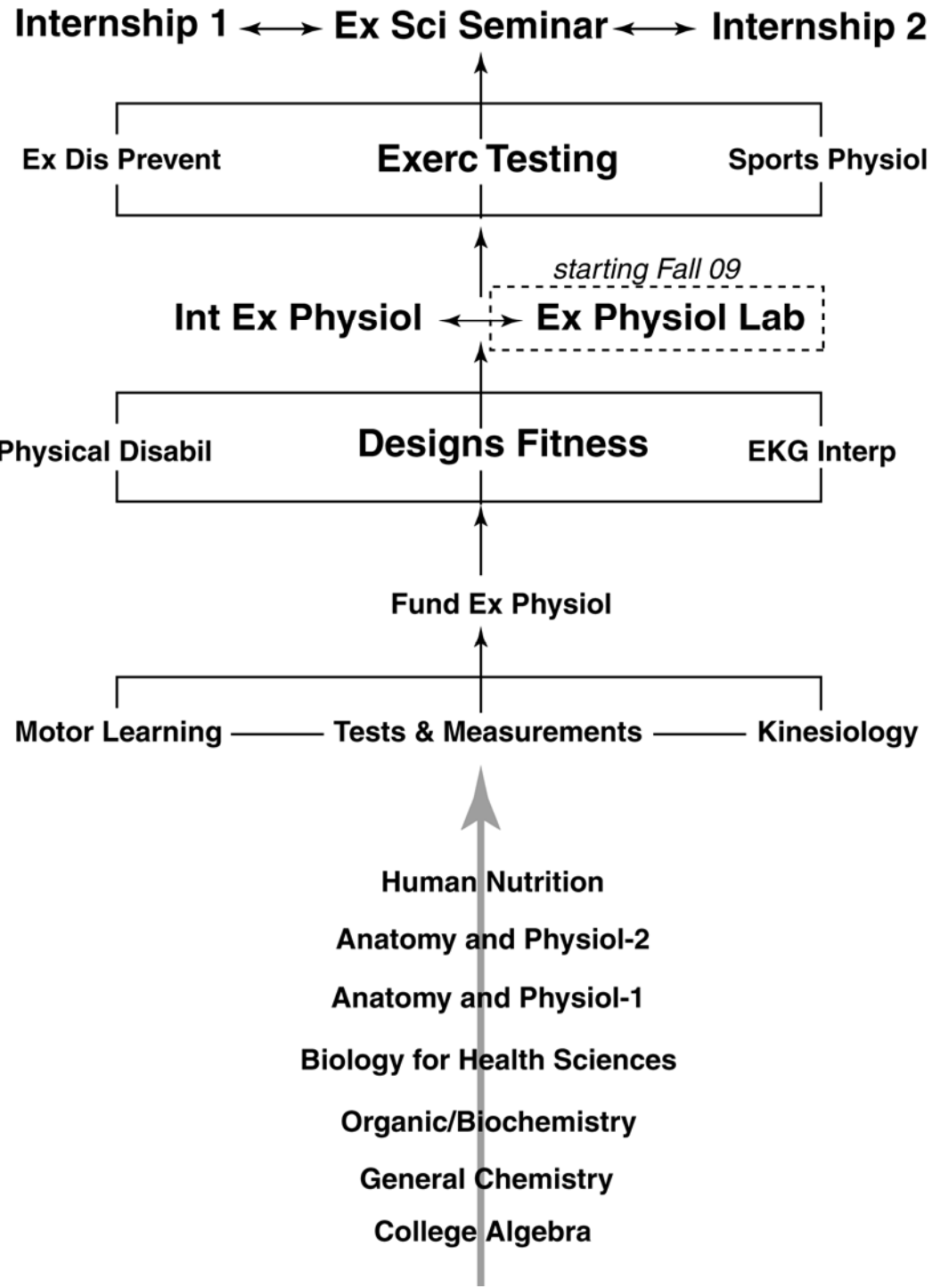


Figure 1. Progression of courses based on prerequisite study in the basic sciences.

We want to assess our students' entrance competencies in basic science, consisting of their pre-requisite grades in each of math, chemistry, nutrition and human biology and physiology, as well as their overall GPA in these science pre-requisite courses and their overall entry GPA to the Exercise Science major. This seemed important to us, as it provides data that can assist us in deciphering whether good grades in these prerequisite courses correlates to higher grades and competencies in our assessments linked to our core classes. Such entrance assessment items are listed in Table 1.

Table 1. Assessment items for entry courses to the Exercise Science degree.

Entrance Assessment Items
College algebra
General chemistry
Organic/Biochemistry
Biology for Health Sciences
Anatomy and Physiology -1
Anatomy and Physiology -2
Human Nutrition
GPA for above courses
Overall entry level GPA

PIP 2 and 3: Assessment Within Exercise Science Core Courses

Figure 1 shows the central core courses within the Exercise Science degree. The large font courses that form the central backbone of the degree will be used to provide assessment items, as explained below. These courses comprise assessments for goals 1, 2 and 3.

PEP470: Designs For Fitness

This class provides the first experience of exercise prescription and laboratory exercise testing for our students. The primary assessment item in this course is the exercise testing and prescription assignment, which we have chosen to use as an assessment item for our junior students.

PEP426: Intermediate Exercise Physiology

This class provides the in-depth coverage of advanced exercise physiology theory of energy catabolism and the systems physiology responses to exercise stress. It is widely recognized by faculty and students alike as a pivotal course of theory that defines our undergraduate degree. Due to the importance of this content to the student's training in exercise science/physiology, we will have multiple assessment items based on general topic areas within exercise physiology.

PEP427: Laboratory Skills In Exercise Physiology

This is a new course in our degree, and will first be taught as an undergraduate Topics class in Fall, 2009. We are in the process of completing appropriate forms for official course approval and recognition in our curriculum and within the College of Education.

The course is based on the need to offer extensive practical skills training in exercise testing, as well as to use laboratory testing experience to reinforce theory presented in PEP326, 426 and 470. Note that this course is taught in a sequence allowing it to be offered the same semester as PEP426: Intermediate Exercise Physiology. As such, the laboratory content and progression of this course closely follows that of PEP426, which effectively makes both PEP426 and PEP427 support each other in the education and skills training of our students.

PEP427: Laboratory Skills in Exercise Physiology provides the opportunity to assess practical skills of our students for multiple laboratory skills.

PEP476: Exercise Testing/Interpretation

This class culminates the students learning of exercise physiology knowledge, as well as use of laboratory equipment in physiological assessments applied to clinical applications involving disease detection and physiological assessments applied to individuals with or at risk for degenerative diseases, or who have medical concerns when exercising due to pre-existing medical conditions.

As with PEP427, PEP476: Stress Testing/Interpretation assesses the student's laboratory skills in clinical exercise physiology.

PEP391: Exercise Science Seminar

This is a culminating experience for our undergraduates. We try to schedule this 1 credit course late in the course progression so that students have the opportunity to apply their prior learning to a topic of interest that they are to develop and present as a high quality PowerPoint presentation. In addition, students discuss their development in their degree over the 4 years, and assess their next educational or professional work opportunities. We will use the assessment of the PowerPoint presentation as the assessment item for this course.

PEP495: Practicum (Internship)

We require our students to complete two practicum classes, each requiring 3 credit points equating to at least 180 hours of work experience, totaling at least 360 hours in employment experience. These experiences can be in two of three areas; 1) cardiac rehabilitation/clinical exercise physiology in a hospital or outpatient setting, 2) corporate health promotion as an exercise leader, or 3) exercise/wellness programs in public institutions. We will use our current 14 point assessment instrument, consisting of 10 items for "professional performance", and 4 items for "personal qualities", with each item assessed on a 6-point Likert scale.

- 6. Given the assessment activities and results to date, describe your assessment plans for the next year (2008-09). If significant changes have been made to degree program SLOs or to the general assessment strategy, please clearly describe**

We like to feel that we are a very committed program of faculty as far as our undergraduate degree is concerned. We meet regularly on a weekly basis to review student progress, course appropriateness to changing research findings and professional practice in exercise and sport science, and the function of our research and teaching laboratories. All faculty members routinely upgrade course content on a yearly basis. We will need to ascertain how to best use our proposed course assessment items in our deliberations in future years.

NCA Assessment Grid: BS Exercise Science

Program Goal	Student Learning Objective	COE/ Univ. Goal	Assessment/**PIP/ Course if applicable	Direct/ Indirect	Score Range	Pass Score
1. Educate our students in the advanced knowledge base of exercise science/physiology and all of it's applications (exercise prescription, body composition, exercise testing, fitness development and assessment, environmental physiology, and clinical applications)						
	Basic Science & Entrance GPA					
	1. College Algebra	K	Grade/1	Indirect	A ⁺ - F	C
	2. General Chemistry	K	Grade/1	Indirect	A ⁺ - F	C
	3. Organic/Biochem.	K	Grade/1	Indirect	A ⁺ - F	C
	4. Biology Health Sci.	K	Grade/1	Indirect	A ⁺ - F	C
	5. Anat. & Physiol 1	K	Grade/1	Indirect	A ⁺ - F	C
	6. Anat. & Physiol 2	K	Grade/1	Indirect	A ⁺ - F	C
	7. Human Nutrition	K	Grade/1	Indirect	A ⁺ - F	C
	8. Overall GPA for above	K	GPA/1	Indirect	A ⁺ - F	C
	9. Overall entry GPA	K	GPA/1	Indirect	A ⁺ - F	C
	Assessment within Exercise Science core courses.					
	PEP470					
	Demonstrate competency in the collection of data acquired from physical fitness assessments of a client, the presentation of the	K, S	Fitness assessment project/2,3 PIP 2	Direct	0 – 100%	80%

	data supported by valid result interpretations, and a subsequent recommended exercise training program.					
	PEP426					
	1. Understand neuromuscular physiology, muscle contraction, the ATP demand during exercise, bioenergetic principles and the phosphagen and glycolytic energy systems.	K	Grade/2,3 PIP 2	Indirect	0 – 100%	80%
	2. Understand ergometry, calorimetry, mitochondrial respiration, steady state VO ₂ and the regulation of substrate use during exercise of different intensities.	K	Grade/2,3 PIP 2	Indirect	0 – 100%	80%
	3. Understand the cardio-respiratory responses to incremental exercise, and the measurement and interpretation of VO ₂ max and metabolic thresholds.	K	Grade/2,3 PIP 2	Indirect	0 – 100%	80%
	4. Understand how the multifaceted neuro-endocrine responses to exercise stress	K	Grade/2,3 PIP 2	Indirect	0 – 100%	80%

	influence muscle metabolism, cardio-pulmonary function, fluid balance and thermoregulation. Understand the influence of different environmental conditions on the physiological responses to exercise stress.					
	5. Final grade	K	Grade/2,3	Indirect	A ⁺ - F	B
	PEP476					
	Final exam	K	Grade/2,3	Indirect	0 – 100%	80%
2. Teach and allow practice of skills in all aspects (applied and clinical) of exercise and applied human physiology laboratory testing.						
	PEP470					
	Demonstrate competency in the collection of data acquired from physical fitness assessments of a client, the presentation of the data supported by valid result interpretations, and a subsequent recommended exercise training program.	K,S	Fitness assessment project/2,3	Direct	0 – 100%	80%
	PEP476					
	Demonstrate	K, S	Laboratory skills	Direct	0 – 100%	80%

	<p>competency in skills in preparing subjects for 12 lead ECG assessment and interpreting the resting and exercise electrocardiogram. Demonstrate competency in skills in administering clinical exercise tests on the treadmill and cycle ergometer. Demonstrate competency in skills in understanding pharmacology and their influence on responses to graded exercise.</p>		<p>assessment/2,3</p> <p>PIP 2</p>			
	PEP391					
	<p>Demonstrate competency in the development of PowerPoint presentations, public speaking and having a command for the knowledge base of exercise science/physiology</p>	K, S	<p>PowerPoint presentation/2,3</p> <p>PIP 2</p>	Direct	0 – 100%	80%
3. Nurture the development of professional skills and an ethical philosophy of professional practice.						
	PEP391					

	Demonstrate competency in the development of PowerPoint presentations, public speaking and having a command for the knowledge base of exercise science/physiology	K,S	PowerPoint presentation/2,3 PIP 2	Direct	0 – 100%	80%
	PEP495					
	Demonstrate application of knowledge and skills, as well as a suitable professional demeanor, in the work setting.	K, S, R	Final scores on a 14 item, 6-point likert scale, site supervisor assessment instrument. We will record scores for all items, as well as an overall score. We will also record scores for both experiences classified as any combination of a) clinical, b) corporate, or c) public. 2,3 PIP 3	Direct	A+ - F Plus 6-point likert on the 14 items	B

* COE Conceptual Framework for Student Learning Outcomes: U – Understandings, P – Practices, I – Identities

* University of New Mexico Student Learning Goals: K – Knowledge, S – Skills, R – Responsibilities

Each element within the COE conceptual framework (U, P, I) aligns with the corresponding UNM student learning goal (K,S,R)

Three-year Plan – Program will continue to add (or select) a minimum of one *priority* learning goal and two associated student learning objectives each Fall semester that will be assessed in the corresponding academic year. The SLO’s will be assessed for ALL students in the program and data from the assessments entered into the electronic COE Assessment System for both Fall and Spring semesters. Program coordinators will share these data with their program faculty and faculty will discuss the results of the assessments. Finally, the faculty will consider whether the assessment methods have accurately and effectively evaluated the priority SLOs and program goals. Changes in program procedures, instruction, and assessment may result from a discussion of results. An “Annual Program Report” on the findings and discussions of faculty will be submitted by the program to the Department Chair each year.

****PIP (Points in Program)**, – The College of Education, as part of the NCATE accreditation process, developed a “Points in Program - PIP” gateway assessment procedure for tracking students progress through the program. This tracking system has been adopted by all programs across the COE. In this system, student learning objectives are assessed at PIPS 2,3, & 4. The PIP system is described below.

PIP 1 – Admission requirements

PIP 2 – Assessments that occur during program coursework

PIP 3 – Assessments directly related to Field Experiences (student teaching, internships, etc)

PIP 4 – Program Exit assessments (licensure exams, final projects, comprehensive exams, theses/dissertation defenses, etc)

Evaluative Rubric for Annual Progress Reports on Assessment of Student Learning BS Exercise Science

Report Elements	Exemplary 3	Acceptable 2	Unacceptable 1	Score for each Element
<i>Degree program student learning outcomes (SLOs) that were assessed during the year</i>	SLOs were stated in terms of measurable knowledge, behavior, value, or disposition.	Not all of the SLOs were stated in measurable terms.	No SLOs were listed.	3
<i>Assessment method/measure for each SLO</i>	Two or more appropriate measures were used for each SLO.	At least one measure was used or developed for each SLO.	Measures were not used or developed or were inadequate or were not discussed.	3
<i>Direct measures (at least 1/2 of the measures used are to be direct measures, and at least one direct measure is to be applied to each SLO.)</i>	At least 1/2 of assessment measures were direct, and there was at least one direct measure for each SLO.	No direct measures were used during the reporting year, but direct measures are part of the plan for next year.	No direct measures were implemented or planned for the next year.	3
<i>Participants (students or alumni involved for each measure)</i>	Participants were identified for each SLO, and valid sample selection described.	Participants were identified for some SLOs, but there was some lack of clarity.	Participants were not identified.	3
<i>Timeframe in which measures were administered or data collected</i>	The timeframe for administration of measures or collection of data was specified.	The timeframe was specified for some SLOs, but not for others or there was some lack of clarity.	The timeframe was not specified.	3

<i>Setting/forum in which measures were administered or data collected</i>	The setting or forum in which each of the measures were administered or data collected was specified.	The setting or forum was specified for some measures, but not for all, or there was lack of clarity.	The setting or forum was not specified.	3
<i>Results</i>	Results were described for each SLO that was assessed.	Results were described for a sub-set of the SLOs and/or there was some lack of clarity.	Results were not described for the SLOs that were to be assessed.	3
<i>Process for data presentation to and discussion by faculty</i>	The process that was used for the interpretation, review, and discussion of the data by the faculty was described.	The process was described for a sub-set of the SLOs and/or there was some lack of clarity.	The process was not described. It is not clear whether the faculty considered the results of the assessment.	3
<i>Actions or revisions implemented based on assessment results</i>	Specific actions or revisions have been or will be implemented based on assessment results.	Specific actions or revisions were described but the report of or plan for implementation was unclear or incomplete in some aspects.	There were no specific actions or revisions described.	3
<i>Description of plans for the coming year (2008-09), including any significant changes to degree program SLOs or to the general assessment strategy</i>	<i>Plans for the coming year and any significant changes in SLOs or the overall assessment strategy are clearly described.</i>	<i>Plans and any significant changes were described but in some aspects the description was unclear or incomplete.</i>	<i>There was no description of plans for the coming year nor were any significant changes in SLOs or assessment strategy described.</i>	3