SACS Assessment Data for PSB 3002

**PSB 3002 Area Committee members:**

Katherine Hughes, Philip Lasiter, Monica Rosselli, Robert Stackman (Chair), and Leslie Terry.

1. **Overview:**

Behavioral neuroscience examines the biological mechanisms underlying both normal and abnormal behavior. The *Biological Bases of Behavior 1* (PSB 3002) course represents a survey of basic principles of neuroscience and their application to the study of sensory and motor systems. The objective of the course is to expose students to the broad spectrum of the field, and to prepare them for additional neuroscience and behavior courses at FAU. The objective of the PSB 3002 Area Committee is to meet periodically to discuss discipline-related issues, monitor and interpret academic performance of our students, and to recommend changes in curriculum based on the committee’s findings. The present document provides details of our discussions, the collection and interpretation of assessment data from the course, and how such data are being used to make substantive changes to our course.

1. **Review Discussions:**

After the Department of Psychology retreat in August 2009, the PSB 3002 area committee met on September 18, 2009 to discuss issues raised at the retreat related to the ALCs for the course and other course-related issues. It was decided that the ALCs were being applied appropriately and that we were satisfied with the outcomes to that date. The committee recommended that we continue to monitor student progress along the adopted ALCs. The committee also heard arguments for and against a proposal to replace the PSB 3002 course with a more general survey course entitled, *Mind and Brain*. The committee unanimously rejected this proposal primarily on the grounds that such a course would leave our Psychology majors without exposure to fine details regarding neurophysiology and neurobiology. The area committee also stressed that the PSB 3002 course offers a primary mechanism for preparing students for the psychobiology specialization of the psychology subject GRE exam. The committee agreed that the more general *Mind and Behavior* course would not provide this degree of detail. Finally, at this meeting the committee finalized a master syllabus for the PSB 3002 course.

Over the past two years, we have had a series of committee conversations via email to discuss course issues including, (i) advantages and disadvantages to selecting a common textbook for the course (this was rejected); (ii) course modules that would introduce active learning into the PSB 3002 course (e.g., acting out synaptic release of neurotransmission); and (iii) the availability of support media to reinforce course concepts (e.g., YouTube video content, the accuracy of Wikipedia regarding neuroscience topics).

1. **Assessment Rationale and Evaluation of Data:**

The academic competence of our undergraduate Psychology majors has been assessed using a 10-ALC instrument. The initial application of this assessment instrument was designed to establish a foundation for assisting faculty in understanding the utility of ALCs assessment as a valuable tool for improving and enhancing the quality of undergraduate education in Behavioral Neuroscience amongst Psychology majors at FAU. The 10 ALCs were selected by FAU faculty on the basis of the need to cover a broad range of basic topics, and to gauge knowledge of selected complex issues that are a central part of the biological mechanisms of behavior. Moreover, the existing ALCs in our instrument were gleaned directly from the published content of the GRE subject exam. A committee of behavioral neuroscientists that have achieved world-class recognition for their work provides the published content and the questions comprising the Behavioral Neuroscience portion of the subject exam. Thus, the questions reflect the most important issues reflecting behavioral neuroscience today. The 10 ALCs cover six broad areas: *cells of the nervous system, synaptic physiology, neurotransmission, anatomy of the central and peripheral nervous systems, sensory systems and motor systems*. The committee recommends that each PSB 3002 instructor include questions on their relevant exams to gauge these 10 ALCs. The results are communicated to the committee chair.

The PSB 3002 area committee recently reviewed the assessment data from 2005-2010. The data reveal a fairly stable mean performance of 69% of our undergraduate majors successfully completing exam questions representing the 10 ALCs of PSB 3002. In a number of ALCs we find an improvement in the student performance over the course of the assessed data. Two ALC objectives that ranked consistently highest among the 10 ALCs were Anatomy of the Central Nervous System (#6) and Sensory Systems (#10). Two ALC objectives that ranked consistently lowest were Ionic Bases of Presynaptic Exocytosis and Postsynaptic Potentials (#4) and the Visual System (#8). These results suggest information literacy across key concept areas in behavioral neuroscience. The data also offer suggestions for concept areas in which the committee might implement plans for improvement.

1. **Decisions Regarding Assessment:**

The information gathered from the assessment instrument has been used in several ways. As a committee the data have been interpreted on a regular basis, and this interpretation will be necessary to make appropriate, evidence-based decisions regarding the PSB 3002 course. These decisions will then guide the implementation of course changes.

a. The committee’s response to the current ALC assessment data and the instrument used to collect the data is strongly in favor of continuing to use the agreed upon ALCs. Specifically, the committee recommends that no changes be made in the implementation of the ALCs.

b. While there is demonstrated overall improvement in student performance in some of the subject areas, there are other areas for which performance has remained stable over the assessment period. The committee has agreed to review these specific ALC topics and then meet to discuss ideas for enhancing student competency. The goal of this effort will be to make programmatic adjustments in these particular ALC topic areas, to show continued improvement in student performance

c. Concern was raised regarding the need to make the course content more equivalent across the instructors teaching the PSB 3002 course. The adoption of a master syllabus has helped in this effort. However, it is will be important to review the current approaches used by different faculty to ensure that the depths to concepts are presented is made as consistent as possible. The committee has agreed to meet in the coming months to make any necessary corrections.

d. The PSB 3002 course is a prerequisite for a number of other neuroscience-related courses. Committee faculty that are teaching Bio Bases 2 and other courses for which Bio Bases 1 is a prerequisite, are finding some marked differences amongst their students. Historically, we have had a number of adjunct faculty and instructors teaching PSB 3002 over the past few years. The committee’s plan to review how specific topics are being presented across responsible faculty, will have to also consider mechanisms for course consistency extend to adjuncts, instructors, and part-time faculty teaching the PSB 3002 course.