Assessment: Course Four Column

Courses (SCI) - Biology

BIOL 410:Plant Physiology

Course Outcomes	*Assessment Measures*	*Results*	*Actions*
Plant structure - function correlations - Plant structure - function correlations **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Exam -** Essay Exam 1 scores **Criterion:** 70% Class average	**Reporting Period:** 2017-2018 **Criterion Met:** Yes Class average = 86% (01/28/2019)	
Comprehension of plant processes - Comprehension of plant processes. **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Exam -** Essay Exams 2 & 3 scores **Criterion:** 70% Class average	**Reporting Period:** 2017-2018 **Criterion Met:** Yes Class average = 86% (01/28/2019)	
Critical Thinking - Critical Thinking **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Reading -** Primary literature review **Criterion:** 70% Class average	**Reporting Period:** 2017-2018 **Criterion Met:** Yes Class average = 95% (01/28/2019)	
Scientific Terminology - Scientific Terminology **Course Outcome Status:** Active **Next Assessment:** 2022-2023	**Exam -** Essay exams and literature review **Criterion:** 70% Class average	**Reporting Period:** 2017-2018 **Criterion Met:** Yes Class average = 84% (01/28/2019)	**Action:** As is often the case with my upper division courses, I am rather dissatisfied with my performance. This is a common reaction of mine when teaching a subject such as this one, in which I have significant expertise. Plant Physiology is a broad subject that requires integrating fundamental chemical and physical processes with plant form and structure. As such it is challenging to teach in that decisions must be made as to which topics to cover and in how

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			much depth. Fortunately, this semester's student cohort was not only the largest, (11) but the best prepared. We can thank the BS Biology for this increase in number and quality. When I compare my coverage of Plant Physiology to the same class that I took as an undergraduate in the late 1970's, I sincerely believe that I did a far better job. However when I think back to my graduate course work in this subject, I am a bit humbled. As part of my end of the semester 'round up' with the students, the subject they found most interesting or engaging was plant water relationships. I was a bit surprised at this, as the subject is a bit dry (no joke intended) and involves some straightforward algebra. The subject is of course central to plant physiology, and I cover it in some depth. Their enthusiasm is both a reflection of a successful presentation and a suggestion of going deeper into this topic next time. A major disappointment was their performance on the photosynthesis exam questions. Their responses to questions on the 'light reactions' were adequate, but their responses to questions on the 'dark reactions' indicated serious problems. This was in spite of the improved preparation of this cohort. While generally they dealt with

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			questions on the Calvin cycle in general, when it came to details several students completely bungled their responses. Specifically, the carboxylase vs oxygenase activities of RUBISCO was confusing to them. This confusion carried over to describing the C3, C4 and CAM pathways. Clearly, my presentation of this subject material needs to be sharpened. The semester ending discussion of plant hormones was hampered by two factors. Firstly, hormones were caught in the end of the semester crunch. And secondly, the current edition of the text does not deal with hormones in the traditional way, a chapter by chapter discussion of each hormone. Rather, each hormone's activities are spread over several chapters dealing with plant development. As a consequence I brought in substantial supplementary materials. While their responses on the exam were adequate, they were a bit superficial for my taste. I will be investigating other text options for the future. To sum up, student preparation for this class has improved markedly. Plant water relations are a possible 'hook' to further engage students. The discussion of Calvin cycle variants needs to be increased/improved. Finally, a

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			new text needs to be searched for. If a new text cannot be substituted, the hormone discussion needs to be radically overhauled. (01/28/2019)