Course Description (principle topics covered):

Objectives:
- Demonstrate knowledge of basic biological principles
- Understand the integration of biology in various fields of engineering
- Explore contemporary issues with respect to the fields of biology and engineering
- Demonstrate skills needed to research and present technical information through presentations and in written reports

Content:
Students will focus on basic concepts of biology, and how many of these are directly related to engineering challenges associated with environmental issues, public health, and medicine. Subjects range from the basic molecules of life to remediating ecosystems through restoration engineering. Material will be learned through class discussions, demonstrations, and student projects. The course serves to broaden engineering students’ understanding of the science of biology as it relates to engineering, stimulate interest in technical careers, address ABET science requirement and to address at least one common engineering program outcome related to life-long learning. Lectures utilize a significant internet-based content in order to keep the content from being too dry and to take advantage of recently published biological/engineering materials.

Required Texts/References:
None. Power-Point slides used for class discussions will be posted on MyLMU Connect.

Course Work/Expectations:
Because there is no text it is imperative that students attend lecture and take notes. If they miss a lecture it is up to the student to obtain the notes from another student that did attend. The course will incorporate short quizzes, regular exams, group presentations and research papers. Throughout the course, the students will learn and demonstrate knowledge of biology and engineering, demonstrate effective written and verbal skills, as well as incorporate those skills needed to engage in life-long learning.

Comment:
This intent of this course is to engage engineering students and encourage them to explore the impact of engineering solutions to biological systems in the global, economic, societal and environmental arena.