SOUTHEAST MISSOURI STATE UNIVERSITY

Department of Biology **BI 489**

Analysis of Biological Issues **New Spring 2006**

I. Catalogue Description and Credit Hours of Course

Integration of knowledge, skills, and experience by students from disparate areas of biology through investigation of biological issues with broad world or community importance. Two lecture hours. (2)

II. Prerequisites: 30 hours of BI, BO, BT, ZO courses

III. Purpose or Objectives of the Course:

A. Students will demonstrate an understanding of the processes of science, conjecture and refutation, and experimental design.

B. Students will demonstrate skills in literature search and analysis, and information management.

C. Students will develop skills in the analysis of biologically related issues of socialimport. Topics will vary.

D. Students will apply the fundamental principles of biology to real world problems.

E. Students will explore and construct views on the responsibility of scientists to the larger community.

F. Students will explore and construct views on the role of biologists in the ethical conduct of science.

IV. Expectations of Students:

A. To participate actively in all problem sessions, group experiences, assignments, and presentations.

B. To examine case studies on contemporary and ethical issues in science and participate in their resolution.

C. To prepare and orally present information on one component of the contemporary issue.

D. To participate in the preparation of a group paper, to be shared with the class, that identifies key elements of the component, ethical issues, examines elements of public perception, and provides a critical summary of the relevant research on an assigned component of the issue.

E. To prepare a short paper addressing the individual's position on the assigned component.

F. To prepare a position brief on the whole issue that incorporates data provided by all groups and that contains the following elements: research findings, critical analysis, integration of basic biological principles and information, formulation of a dependable position, and discussion of ethical issues and the role of scientists in society.

G. To effectively participate in all assessment activities.

V. Course Content or Outline

Week	Topic or Activity	Class Hours
1-3	Introduction. Introductory case studies.	6
4	Introduction to a case study on global issue with one or two brief introductory readings. Identification by students of questions arising from the case study. Listing, clarification, and grouping of questions into components.	2
5	Students will refine their questions and components. Assignment of individuals and components to groups. Development of a group investigation plan.	2
6-7	Critical analysis of primary literature with an emphasis on experimental design.	4
8-9	Instructor-guided class and group discussions relevant to issue component project. Opportunities for in-class group work.	4
10	Group reports highlighting key elements, public perception, and ethical issues that have been identified on assigned component. Each group will identify one significant paper that communicates essential information relevant to the issue component for the class to read and critically analyze.	2
11-12	Instructor-guided class and group discussions relevant to issue component project. Opportunities for in-class group work. Group summary papers due.	4
13	Oral presentations.	2
14	Oral presentations. / Individual position papers due	2
15	Assessment activities. / Summative discussion.	2
Final Exam (Position Brief) and Summative discussion		
Total		30

VI. Textbooks

No assigned text. Reading materials will be provided by instructor or obtained through student research.

VII. Basis for Student Evaluation

Class participation	10%
Case critiques/Assignments	30%
Group Oral Presentation and PowerPoint	15%
Group Summary	15%
Individual Position Paper	10%
Final Exam = Position brief	20%
Total	100%