Writing course SLOs in SOCRATES

Writing the SLO statements:
For each SLO:

- In a sentence, describe a major application of knowledge that successful students will gain from the course.
- Consider the skills and abilities needed after the student leaves your course…in the next course in the sequence, on the job, after transfer, etc.
- Focus on the big picture for the SLOS. You will use objectives to describe more specific skills.
- Remember that you can include three kinds of abilities: cognitive (critical thinking), psychomotor (proficiently conducting specific motor tasks), and affective (evaluating ethical situations and making value judgments).
- The number of SLOs and the exact format will vary from discipline to discipline. You will probably have 1-5 SLOs for your course, but some disciplines may have more.

Entering SLOs in to SOCRATES.

- In the Learning Outcomes and Objectives" section of SOCRATES you will be given a series of text boxes. You can enter one SLO or one objective in each text box.
- The objectives are already in SOCRATES. Your SLOs should be broader than the objectives and each SLO should have a few objectives that fit "under" it.
- List each SLO in a textbox and then the objectives that come under it in the next few textboxes. Give each SLO a label and number (e.g. SLO(1) to distinguish it from the objectives. Note that you can re-order the textboxes in this part of SOCRATES using the little drop-down number boxes.

Aligning the Methods of Instruction section, Evaluation Methods section, and Typical Homework Assignments section with the SLOs.

- These section explains what methods will be used to teach the course and evaluate the student's work. They need to show those methods tie back to the SLOs.
- Be clear and specific. Use complete sentences. For example, say"Guided discussion emphasizing the analysis of cultural patterns will be used to develop critical thinking skills" not "Discussion".
- Details of instructional methodology (topics within lectures, instructions for group work, etc.) do not have to be given on the course outline…these will show up on the syllabus for each class.

CHECK LIST FOR COURSE SLO DEVELOPMENT

Writing Outcomes:

- ❑ Is the focus on the big picture – a fundamental result of the course?
- ❑ Do you describe what the student can DO with the knowledge they have acquired in the class?
- ❑ Can the outcome be assessed based on work produced by the student?
- ❑ Do the SLOs represent skills and abilities that the students need to carry with them to the next stages of their lives and education?
- ❑ Do all of the course objectives fit under at least one SLO?
- ❑ Is the language clear?

Aligning course elements:

- ❑ Do the Methods of Instruction, Methods of Evaluation, and Typical Homework Assignments sections of the course outline clearly link to the SLOs?
- ❑ Is the information in complete sentences?
- ❑ Is enough information provided in these sections so that it can guide the teaching of a course or the writing of a syllabus?
- ❑ Is there enough flexibility for individual professors teaching the course?

An example of how SLOs may be infused into the course outline
Biology 307

"Outcomes and Objectives" Section of the Course Outline. The objectives are shown under each SLO

SLO (1) Articulate the importance of the diversity of organisms to ecosystem functioning

* correctly utilize the vocabulary of biology.
* identify the characteristics used to classify organisms into major taxonomic groups.
* compare and contrast the roles of fungi, plants, and animals in communities and ecosystems

SLO (2) Explain the basic mechanisms by which organisms survive and evolve.

* outline the basic processes and components of prokaryotic and eukaryotic cells.
* compare and contrast the ways in which fungi, plants and animals solve physiological problems.
* describe the processes by which organisms maintain homeostasis.
* solve Mendelian genetic problems using Punnett squares, pedigrees, and/or similar methods.
* describe the basic processes of molecular genetics.
* explain the process of evolution by natural selection.

SLO (3) Utilize the scientific method and evaluate the scientific validity of information presented by the media and other sources.

* assess the results of scientific investigation into biological questions.
* design and conduct basic scientific inquiries into biological questions.
* draw reasonable conclusions from biological data

SLO (4) Appraise the importance of biology to personal and community issues and be able to gather, and think critically about, biological information relevant to one's life.

* evaluate the implications of genetic biotechnology for modern life.
* articulate the value of biological knowledge to human populations
* provide examples of the relevance of biology to personal interests and community issues.

Instruction Methods and In-class Assignments:

Laboratory work will develop skills in utilizing the scientific method, critically evaluating information, and solving biological problems relevant to personal and community issues. Instructional methods used in labs will include student-designed scientific inquiries into biological questions; exercises assessing the ways in which

organisms maintain homeostasis, and problem-based learning exploring genetic, ecological, and evolutionary principles. Group discussion, both student-led and instructor-guided may be utilized in lab to assist students in learning to explain biological information clearly and articulate the importance of biological processes to community and personal issues.

Lectures will (1) guide students through a comparative analysis of the functioning of organisms from the cellular to the ecosystem levels (2) demonstrate approaches to solving biological problems relevant to society such as genetic and ecological issues, and (3) assist students in developing the technical vocabulary used in biology. Lecture methods of instruction may include traditional lecture, guided discussion, and group activities.

Instruction methods are further detailed on course syllabi. They revised on an ongoing basis as the result of information provided by student feedback during class discussion and labs, and the results of assessments of student learning.

Typical Evaluation and Assessment Methods:

Formative assessment may be provided by direct observation of students during laboratory work, class discussion, and by peer-assisted learning problem solving (e.g. "group quizzes"). Some of this assessment may not be graded. Additional information may be provided by "classroom assessment" techniques such as those described by Cross and Angelo.

Summative assessment methods may include exams, reports, projects, and/or presentations. Objective examinations will emphasize biological vocabulary mastery, problem solving, classification of organisms, and identification of structures. Essay exams will emphasize correct use of biological terms, explanation of patterns and processes, problem solving, and evaluation of information. Written reports, creative projects, and/or presentations will emphasize critical thinking, use of the scientific inquiry process, the importance of biodiversity, and the application of biology to the “real life” of the students.

Details of assessment methods and rubrics are elucidated in the course syllabi. Methods of evaluation/assessment as described in course syllabi will be revised each semester based on analysis of student assessments from the previous semester.

Independent assignments:

Independent assignments will include practice in extracting and assessing information from the textbook and other resource materials, problem-solving exercises, and written work that demonstrates the ability to clearly explain the scientific method and biological concepts. These assignments may include, but are not limited to reading assignments, problem-solving assignments, practice tests, reports detailing the results of student-designed inquiry projects, papers analyzing current biological issues affecting society, and production of creative projects linking the students interests to biological topics. Some of these assignments may be produced by groups of students.