Cosumnes River College Curriculum Handbook

Student Learning Outcomes – Procedures and Practices

The Curriculum Committee will follow these definitions and criteria in approving student learning outcomes for a program or course. In accordance to WASC accreditation standards and guidelines established by faculty in the Center for Advancement of Staff and Student Learning (CASSL), approval by the Curriculum Committee certifies that the student learning outcome(s) convey a general statement of the measurable skills and abilities a student will possess upon successfully finishing a course of study.

Definitions of Student Learning Outcomes

A Student Learning Outcome (SLO) is a general statement of the measurable skills and abilities a student will possess upon successfully finishing a course of study. Broader in scope than "objectives", SLOs focus on the important general abilities a successful student will take away from the class, program, or college for use in his/her future life. A SLO must be measurable, meaning that the outcome has clarity sufficient to assess the skill or ability to determine that a student has achieved the outcome.

Programs and/or courses may have only a few SLOs per course; however, some disciplines will have a great many SLOs because of the requirements of their disciplinary organizations. The detail included in SLOs will also vary according to disciplinary standards. Some SLOs will be very "big picture" – e.g. "students will be able to apply critical thinking techniques to philosophical problems". Other SLOs may be somewhat more focused – e.g. "the student will be able to evaluate medical records in order to assess compliance with regulations for health care services including Medicare, Medicaid, and Managed Care."

A "Program SLO" is a general statement of the measurable skills and abilities a student will possess upon successfully finishing a program.

- Examples
    - Honors Program: The student will be able to research difficult issues and questions that arise within the disciplines studied and arrive at thoughtful conclusions based on that research.
    - GE Program: The student will be able to utilize the basic methods of the discipline studied and apply those tools to personal and community issues.
    - AS in Psychology: The student will be able to analyze patterns of human behavior, developing thorough and complex explanations consistent with the major psychological perspectives.
    - Tutoring Program: Students in basic skills classes will find accessible and prepared tutors through the tutoring program and by working with these tutors will improve their ability to success in specific classes.

A Course SLO is a general statement of the measurable skills and abilities a student will possess upon successfully finishing a course.

- Examples
    - Non-majors biology course: When given data from a scientific report, for example as reported in a newspaper, the student will be able to draw reasonable conclusions and apply the information to personal and community issues.
    - Computer applications course: The student will be able to choose the appropriate software application to use in a variety of situations and will use that application with precision.

A Student Learning Outcome (SLO) must indicate an ability or skill level within the conventional use of the taxonomies typically used to describe learning (see below). In the context of SLOs, taxonomy is a classification of skills and abilities based on level of achievement. The levels move from very simple processes to very complex ones. There are three types of classifications:

- Cognitive taxonomy: A classification of cognitive skills and abilities ranging from relatively simple tasks such as recognition to very complex processes such as critical analysis.

- Psychomotor taxonomy: A classification of physical (motor) skills and abilities ranging from relatively simple imitation to creative mastery of a physical skill.

- Affective taxonomy: A classification of skills and abilities that relate to values and emotions; levels range from relatively simple recognition of value to complex processes such as critical evaluation of ethical situations.

Approval of a Student Learning Outcome

It is advisable that a Program SLO aligns with one or more college-level SLOs or general-education SLOs to provide clarity in the emphasis of skills and abilities that a student will acquire in relation to college as an institution.

It is advisable that a course SLO align with one or more program SLOs to provide clarity in the emphasis of skills and abilities that a student will acquire in the course in relation to a program. A course SLO must be measurable, meaning that there is a clear indication that a skill or ability can be assessed to determine that a student has achieved the outcome. The "Methods of Evaluation" section of the course outline should provide clear indications of the ways in which the SLO could be assessed.

A program proposal for a new program or for a revision of a program must provide student "Learning Outcomes" to clearly indicate the measurable skills and abilities a student should be able to possess upon successfully finishing a program.

A course outline proposal for a new course or for a revision of a course must provide at least one Student Learning Outcome to clearly indicate the measurable skills and abilities a student should be able to possess upon successfully finishing a course.

Based on the definitions provided, approval of a program and/or course student-learning outcome will be based on the following criteria:

- In at least one sentence, the phrase will describe a major application of knowledge that successful students will gain from the course in terms of a measurable skill or ability.
- The sentence focuses on the big picture of what skill or ability a student will be able to take away from the course or program, or college for use in his/her future life. The SLO is a broader statement that should align with a course objective (that describes more specific skills that a student will achieve by completing the course).
- The sentence indicates the skill or ability is classified within a cognitive, psychomotor and/or affective taxonomy.
- The sentence provides a learning outcome that is measurable (meaning that the outcome has clarity sufficient to assess the skill or ability to determine that a student has achieved the outcome).

Within a course outline proposal, to provide clarity of learning outcome and assessment, the Method of Instruction and the Evaluation Methods must provide explanations that align with the course SLO(s). The Methods of Evaluation and Methods of Instruction sections should provide indications of how the students will learn the skills or abilities of the course outcome(s) and how the instructor will assess that learning. There should be a clear alignment between these sections and the SLOs for the course. These guidelines should be considered to approve an SLO per these two sections:

- These sections explain 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.
- Use complete sentences that are clear and specific. For example, in the Method of Instruction, state, "Guided discussion emphasizing the analysis of cultural patterns will be used to develop critical thinking skills" not merely "Discussion," which is vague and provides no alignment to a learning outcome. It is acceptable to provide a qualification, such as "may include" to allow academic freedom for an instructor. For instance, "A method of instruction may include guided discussion emphasizing the analysis of cultural patterns to develop critical thinking skills."

The explanation in the Methods of Instruction section and the Evaluation Methods section should be considered to determine if a learning outcome is "measurable" and allows clarity for assessment.

Format of a Learning Outcome

The detail included in SLOs will vary according to disciplinary standards. Therefore, there are options in how a learning outcome can be formatted. Any format for the sentence(s) providing a student learning outcome must enumerate each learning outcome when there is more than one (SLO #1; SLO #2; etc.). The enumeration can be listed first, or at the end of a learning outcome within a parenthesis. Listing the SLO in parenthesis at the end of the sentence may provide an easy reference to identify the skill or ability by taxonomy. The goal of the formatting is to make it easy for the reader to distinguish between the broader SLO and the more detailed objectives that support it. Any format that does this may be acceptable; four options that work well are shown below.
A Program proposal must provide the Program SLO in the Learning Outcome section of the proposal. For a "course proposal," the curriculum committee may consider various formats based on the criteria to approve a learning outcome. Yet, it is advisable to follow one of these four options:

Option One: Provide the enumerated SLO by label with the sentence in CAPITAL LETTERS, and providing the course objectives that align with the SLO directly below.
Example: A course in Pre-Algebra:

Upon completion of this course, the student will be able to:

- SLO 1: ARTICULATE THE IMPORTANCE OF THE ORDER OF OPERATIONS AND HOW THEY RELATE TO THE REAL NUMBER SYSTEM, EXPRESSIONS, EQUATIONS AND EVALUATION OF MATHEMATICAL FORMULAS.
- Compute with accuracy problems involving the basic operations of arithmetic (addition, subtraction, multiplication, division, exponents, order of operations) on signed numbers.
- Multiply and divide numbers expressed in scientific notation. expressed in scientific notation.
- SLO 2: DEMONSTRATE THE ABILITY TO RECOGNIZE KEY WORDS OR PHRASES THAT WOULD GUIDE ONE THROUGH THE TRANSLATION OF A MATHEMATICAL PROBLEM IN WORD FORM TO AN ALGEBRAIC EXPRESSION OR EQUATION.
- Solve applied problems using signed numbers, variable expressions, scientific notation, and equations.
- Solve linear equations in one variable involving signed numbers, fractions, and decimals.
- Directly translate equations in word form to symbolic form with use of variables and solve them.

- SLO 3: INVESTIGATE AND MODEL REAL LIFE PHENOMENON THROUGH THE USE OF LINEAR EQUATIONS IN TWO VARIABLES AND THEIR CORRESPONDING GRAPHS (ALGEBRAICALLY AND GEOMETRICALLY), AND THINK CRITICALLY ABOUT HOW THE MATHEMATICS IS RELEVANT TO ONE'S LIFE.
- Find solutions to linear equations in two variables and plot these points on the two-dimensional coordinate system.

Option Two: Similar to the first option, list the enumerated SLO in lower-case letters for the sentence(s), and provide the course objectives by number directly below the SLO.

Example: An introductory course in Anthropology:

Upon completion of this course, the student will be able to:

- SLO 1: Articulate general principles of biology and science as it relates to physical anthropology.
- Objective 1a: Describe the process of evolution by natural selection.
- Objective 1b: Define basic cellular processes, including meiosis and mitosis.
- Objective 1c: Articulate concepts of transmission genetics (Mendelian inheritance) and solve Mendelian problems using Punnett squares and pedigrees.
- SLO 2: Delineate the classification of non-human and human primates in a taxonomic relationship, focusing on their evolutionary origins and shared behavior.
- Objective 2a: Apply socio-biological principles of understanding behavior to human and observed primate behavior.
- Objective 2b: Understand the classification of primates to illustrate evolutionary history
- Objective 2c: Compare and contrast non-human and human behavior such as conflict, cooperation, mating strategies, feeding ecology, use of environment, and mate selection.
- SLO 3: Understand the trajectory of human evolution based on key fossil finds.
- Objective 3a: Construct a probable taxonomy for extinct hominids including evolutionary descent.
- Objective 3b: Evaluate current evidence of hominid fossils and artifacts and their validity to understanding human evolution.

Option Three Provide the sentence of the student-learning outcome in UPPER CASE letters and then the enumerated SLO in parenthesis.

Example: A course in an introductory public speaking course:

Upon completion of this course, the student will be able to:

- DESIGN AND RELATE MESSAGES CLEARLY FOR EFFECTIVE AND APPROPRIATE ORAL COMMUNICATION (SLO#1).
- Analyze an audience using age, gender, cultural variations, and other appropriate measures.
- Design, deliver and differentiate a variety of speech types, including, at minimum, the speech to inform, to entertain or relate (within a special occasion), and to persuade.
- Design presentational aids, audio and/or visual, appropriate to the audience, message and context.
- Recognize and respond to techniques for managing communication apprehension.
- APPLY EFFECTIVE LISTENING SKILLS TO COMPREHEND SPOKEN MESSAGES, ANALYZE INFORMATION CRITICALLY AND CONSIDER MULTIPLE PERSPECTIVES (SLO#2).
- Demonstrate critical listening skills.
- Recognize and model constructive feedback.

Option Four Provide one or more student learning outcomes first and then list all of the course objectives below the learning outcomes.

Example: A course of Physical Education Theory for a Personal Trainer:
Upon completion of this course, the student will be able to:

- SLO #1: apply principles and information learned to an individual's specific needs as a personal trainer in a professional environment, and to take and pass the NSCA exam.
- Consult with and evaluate an individual's goals and physical fitness level.
- Identify basic principles in the exercise sciences.
- Demonstrate and apply training techniques to a fitness program designed to meet a specific individual's needs.

For a course outline proposal, the curriculum committee may consider various formats due to disciplinary standards. Yet, for approval, any format must meet the criteria provided for a learning outcome. It is advisable to follow one of these four options provided, although not mandatory. These procedural practices provided are established within the WASC accreditation standards and the guidelines by faculty representing the Center for Advancement of Staff and Student Learning (CASSL), including the CASSL publication, SLO's at CRC: An Overview and Handbook (January, 2006).

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In the upcoming update of the Curriculum Handbook (Revisions occurring in Fall 2009), the text of this document will be placed in Part 3: Curriculum Policies, under "Curriculum Development." (See Index below)

Part 3: *Curriculum* Policies

District Academic Senate curriculum *policies and regulations*

District Curriculum Coordinating Committee

Program and course approval

Educational mission

Curriculum development

Review of curriculum
Curriculum committee
Course repetition
Student Learning Outcomes
Prerequisite approval
AA degree requirements
Assigning courses to disciplines
Reading, writing, and mathematics competency courses
LRCCD shared courses and the Rule of Five