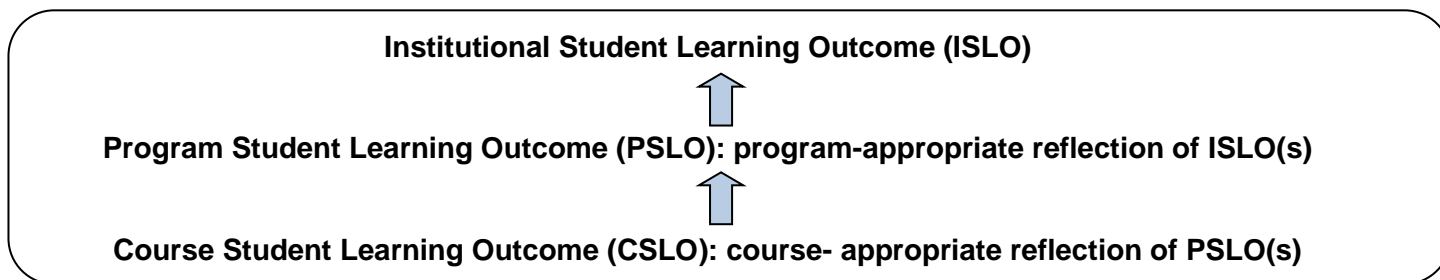


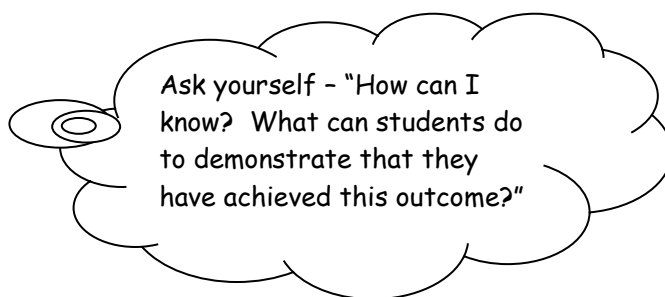
Guidelines for Well-written Student Learning Outcome Statements

1. Outcomes should identify and measure or validate only the most useful and meaningful learning goals of the course, program, institution.

2. Outcomes should “align up”:



3. Outcomes must be measurable and/or verifiable or they can't be assessed. Use verbs that specify the skill, ability, behavior, or habit of mind you will assess with the assignment. Be sure that each outcome is going to be measured or verified at least once.



- Don't use, "students will understand....". Choose a verb that allows you to verify_ their understanding. If students understand a concept, they should be able to:
 - describe a phenomenon
 - explain a process
 - identify key elements
 - apply their understanding to perform a task

4. Outcomes should be explicitly stated in terms of what students will do. Use active verbs (below and on next page) to describe what students will do prior to successful completion of the course, program or degree. Instructor goals can be converted into student learning outcomes as shown below:

| Course/Program Objective – | Student Learning Outcome – on the Syllabus |
|--------------------------------|--|
| To demonstrate --- to students | Students will describe, explain, review, |
| To introduce students to ----- | Students will identify, articulate, |
| To help students understand -- | Students will compare, contrast, analyze, defend, |

ACTIVE VERBS for LEARNING OUTCOME STATEMENTS – Bloom's Taxonomy

The categories of learning presented below proceed from the simplest forms of knowing to the most complex forms. Only the three highest levels of knowing - **Analysis**, **Evaluation** and **Creation** - are universally accepted as intended to elicit students' critical, creative and problem solving skills. Ideally, assignments integrate lower with increasingly higher levels of learning, engaging students concurrently with acquiring and applying new knowledge.

I. Knowledge

Verbs: define, identify, label, list, name, state, match, recognize, locate, memorize, quote, recall, reproduce, tabulate, tell, copy, discover, duplicate, enumerate, listen, observe, omit, read, recite, record, repeat, retell, visualize

II. Comprehension [or understanding] of new material

| Verb | Appropriate testing/ measurement of learning |
|---------------|--|
| Classify..... | Sort a random list into appropriate groups |
| Describe..... | Write or orally describe a phenomenon or concept |
| Discuss..... | Write or orally discuss a phenomenon or concept |
| Explain..... | Write or orally explain a phenomenon or concept |
| Express | Choose appropriate language or symbols to express a concept (e.g. write a poem or paint a picture evoking sadness) |
| Identify..... | Choose an appropriate answer in a multiple choice test |
| Indicate..... | Choose an appropriate answer in a multiple choice test |
| Locate | Pinpoint a site on a map or label a diagram (e.g., skeleton) |
| Restate | Re-write or explain a concept in their own words |
| Review..... | Present a summary |

Paraphrase, summarize, extend, associate, convert, infer, translate, ask, cite, discover, generalize, give examples, group, observe, order, report, represent, rewrite, show, trace, transform

III. Application of new knowledge or skills

| Verb | Appropriate testing/ measurement of learning |
|------------------|---|
| Apply..... | Use knowledge to accomplish a task |
| Calculate | Use mathematical reasoning to determine a quantity, etc. |
| Dramatize | Use role-playing to illustrate a concept |
| Illustrate | Use drawings to explain, show a process, etc. |
| Practice | Use knowledge to follow established procedures and refine a skill |
| Schedule | Use knowledge to develop a timeline and plan to accomplish a task |
| Use | Employ tools and techniques appropriately |

Modify, change, choose, discover, experiment, sketch, complete, interpret, manipulate, paint, prepare, teach, act, administer, articulate, chart, collect, compute, determine, develop, employ, establish, interview, judge, operate, schedule, simulate, transfer, write

IV. Analyze (critical thinking and problem solving)

| Verb | Appropriate testing/ measurement of learning |
|------------------------|---|
| Analyze | Describe parts, organization, functions – such as a process |
| Categorize..... | Place items in appropriate general groups based on similarities |
| Compare | Identify the similarities between 2 or more items, concepts, etc |
| Examine | Methodically scrutinize something to determine facts |
| Experiment, test | Try out something to determine an unknown or whether something is effective |
| Differentiate, | Show how 2 or more items are dissimilar and distinct |
| Plan | Write/describe a procedure to accomplish a goal before beginning it |
| Solve | Use mathematical or scientific reasoning to determine an unknown |

Compare, distinguish, separate, select, connect, discriminate, divide, point out, prioritize, subdivide, divide, survey, advertise, break down, correlate, deduce, devise, diagram, dissect, focus, illustrate, question

V. Evaluation of concepts, alternatives (critical thinking and problem solving)

| Verb | Appropriate testing/ measurement of learning |
|------------------------|---|
| Appraise, assess..... | Describe and judge the value or quality of something based on reasoning |
| Evaluate, judge | |
| Critique..... | Describe the relative merits of something based on criteria |
| Rate, score | Assign a numeric value or ranking that indicates quality |
| Choose, select best... | Use established criteria to identify the optimal alternative from good options |
| Argue | Describe reasons and present evidence for a point of view (written exam question) |
| Estimate | Present a general calculation or anticipated cost or effect of something |

Reframe, criticize, support, decide, recommend, convince, defend, find errors, grade, measure, predict, rank, test, conclude, critique, editorialize, justify, persuade, weigh

VI. Create (critical and creative thinking and problem solving)

| Verb | Appropriate testing/ measurement of learning |
|-------------|---|
|-------------|---|

| | |
|-----------------------|---|
| Formulate | Express [oral, written] in a systematic way a theory or plan |
| Compose, Design.... | Create an artifact (picture, poem, music, etc.) in order to communicate |
| Arrange, Organize.... | Write a detailed plan/ arrangement to manage a problem |
| Propose..... | Present a written plan with rational and arguments for its adoption |

Hypothesize, substitute, construct, invent, integrate, produce, role-play, anticipate, adapt, assemble, collaborate, facilitate, imagine, intervene, manage, negotiate, originate, schematize, speculate, validate, structure