

EXPRESSING STUDENT LEARNING OUTCOMES

1. **Student learning outcomes should be written to complete the following statement:**
"Upon successful completion of this course, students will be able to. . ."
2. **Express goals and performance to be measured using strong verbs.**
3. **Outcomes identified on the Official Course Outline should be measurable and should reflect the content of the course.**
The following examples of verbs reflect Bloom's Taxonomy distinguishing levels of learning: knowledge, comprehension, application, analysis, synthesis and evaluation. This table lists verbs and provides examples that reflect performance, cognitive, knowledge, psychomotor goals, major purposes and end competencies. Though not exhaustive, this list is intended to clarify course goals for students. There are also some suggestions of verbs to avoid.

Major Categories in the Cognitive Domain of the Taxonomy of Educational Objectives (Bloom, 1956) <i>Descriptions of Major Categories in Cognitive Domain</i>	Examples of the Instructional Objectives and Behavioral Terms for the Cognitive Domain <i>Illustrative General Instructional Objectives</i>	Assessment Language <i>Illustrative Behavioral Terms for Stating Specific Learning Outcomes</i>
<p><u>VERBS TO AVOID</u> Affective, attitudinal verbs are not easily measured and should not be used to identify end competencies.</p>		<p>Affective verbs to avoid include: acquaint, appreciate, be aware of, become aware of, experience, familiarize, introduce, learn, listen, offer, provide, seek, study, think, understand, value, view</p>
<p><u>KNOWLEDGE</u> Remembering previously learned material. May involve recall of a wide range of material, from specific facts to complete theories, but all that is required is the bringing to mind of the appropriate information. Knowledge represents the lowest level of learning outcomes in the cognitive domain.</p>	<ul style="list-style-type: none"> • Define common terms • Know specific facts • Match methods and procedures • Outline basic concepts • State principles 	<p>Count, define, describe, diagram, express, explore, experiment, flow chart, gain, identify, improve, increase, indicate, investigate, know, label, limit, list, locate, measure, match, name, obtain, outlines, print, proofread, recognize, record, reproduce, select, sing, speak, specify, state</p>

<p><u>COMPREHENSION</u> Able to grasp the meaning of material. May be shown by translating material from one form to another (words to numbers), by interpreting material (explaining or summarizing), and by estimating future trends (predicting consequences or effects). These learning outcomes go one step beyond the simple remembering of material, and represent the lowest level of understanding.</p>	<ul style="list-style-type: none"> • Understand facts and principles • Interpret verbal material • Develop charts and graphs • Translate verbal material to mathematical formulas • Estimate future consequences implied in data • Justify methods and procedures 	Comprehend, convert, defend, detect, determine, develop, discuss, distinguish, enhance, establish, estimate, examine, expand, explain, extend, extrapolate, generalize, give example, infer, integrate, interpolate, interpret, monitor, narrow, paraphrase, predict, rewrite, set-up, summarize
<p><u>APPLICATION</u> Able to use learned material in new and concrete situations. This may include the application of such things as rules, methods, concepts, principles, laws and theories. Learning outcomes in this area require a higher level of understanding than those under comprehension.</p>	<ul style="list-style-type: none"> • Apply concepts and principles to new situations • Relate laws and theories to practical situations • Solve mathematical problems • Construct charts and graphs • Demonstrate correct usage of a method or procedure 	Adjust, align, apply, arrange, assign, build, calculate, change, choose, compute, construct, demonstrate, differentiate, discover, document, draw, drive, formulate, manipulate, modify, operate, perform, predict, prepare, produce, relate, show, solve, use, utilize
<p><u>ANALYSIS</u> Able to break down material into its component parts so that its organizational structure may be understood. This may include the identification of the parts, analysis of the relationships between parts, and recognition of the organizational principles involved. Learning outcomes here represent a higher intellectual level than comprehension and applications because they require an understanding of both the content and the structural form of the material.</p>	<ul style="list-style-type: none"> • Recognize unstated assumptions • Critique logical fallacies in reasoning • Distinguish between fact and inferences • Evaluate the relevancy of data • Analyze the organizations structure of a work (art, music, writing) 	Analyze, balance, break down, build, classify, collect, complete, critique, cut, deduce, diagram, differentiate, discriminate, distinguish, identify, illustrate, induce, infer, outline, point out, relate, select, separate, straighten, subdivide
<p><u>SYNTHESIS</u> Able to put parts together to form a new whole. This may involve the production of a unique communication (theme or speech), a plan of operations (research proposal), or a set of abstract relations (scheme for classifying information). Learning outcomes in this area stress creative behaviors, with major emphasis on the formulation of new patterns or structures.</p>	<ul style="list-style-type: none"> • Write a well organized theme • Give a well organized speech • Write a creative short story (or poem or music) • Propose a plan for an experiment • Integrate learning from different areas into a plan for solving a problem • Formulate a new scheme for classifying objects (or events or ideas) 	Categorize, combine, compile, compose, create, devise, design, explain, generate, modify, organize, plan, rearrange, reconstruct, relate, reorganize, revise, rewrite, summarize, tell, transform, unify, write
<p><u>EVALUATION</u> Able to judge the value of material (statement, novel, poem, research report) for a given purpose. The judgments are to be based on definite criteria. These may be internal criteria (organization) or external criteria (relevance to the purpose) and the student may determine the criteria or be given them. Learning outcomes in this area are highest in the cognitive hierarchy because they contain elements of all of the other categories, plus conscious value judgments based on clearly defined criteria.</p>	<ul style="list-style-type: none"> • Judge the logical consistency of written material • Evaluate the adequacy with which conclusions are supported by data • Interpret the value of a work (art, music, writing) by use of internal criteria • Compare the value of works (art, music, writing) by use of external standards of excellence 	Appraise, compare, conclude, contrast, correct, criticize, describe, discriminate, evaluate, explain, justify, interpret, relate, summarize, support, test