Bloom's Taxonomy

Benjamin Bloom created this taxonomy for categorizing the level of abstraction of questions that commonly occur in educational settings.

Competence	Skills Demonstrated
Knowledge	➢ observation and recall of information ➢ knowledge of dates, events, places ➢ knowledge of major ideas ➢ mastery of subject matter *Question cues:* list, define, tell, describe, identify, show, label, collect, examine, tabulate, quote, name, who, when, where, etc.
Comprehension	➢ understanding information ➢ grasp meaning ➢ translate knowledge into new context ➢ interpret facts, compare, contrast ➢ order, group, infer causes ➢ predict consequences *Question cues:* summarize, describe, interpret, contrast, predict, associate, distinguish, estimate, differentiate, discuss, extend
Application	➢ use information ➢ use methods, concepts, theories in new situations ➢ solve problems using required skills or knowledge *Question cues:* apply, demonstrate, calculate, complete, illustrate, show, solve, examine, modify, relate, change, classify, experiment, discover
Analysis	➢ seeing patterns ➢ organization of parts ➢ recognition of hidden meanings ➢ identification of components *Question cues:* analyze, separate, order, explain, connect, classify, arrange, divide, compare, select, explain, infer
Synthesis	➢ use old ideas to create new ones ➢ generalize form given facts ➢ relate knowledge from several areas ➢ predict, draw conclusions *Question cues:* combine, integrate, modify, rearrange, substitute, plan, create, design, invent, what if?, compose, formulate, prepare, generalize, rewrite
Evaluation	➢ compare and discriminate between ideas ➢ assess value of theories, presentations ➢ make choices based on reasoned argument ➢ verify value of evidence ➢ recognize subjectivity *Question cues:* assess, decide, rank, grade, test, measure, recommend, convince, select, judge, explain, discriminate, support, conclude, compare, summarize

From Benjamin S. Bloom, *Taxonomy of educational objectives*. 1984, Allyn and Bacon, Boston, MA.

#1 Know	#2 Comprehend
Count Define Describe Draw Enumerate Find Identify Label List Match Name Quote Read Recall Recite Record Reproduce Select Sequence State Tell View Write	Classify Cite Conclude Convert Describe Discuss Estimate Explain Generalize Give examples Illustrate Interpret Locate Make sense of Paraphrase Predict Report Restate Review Summarize Trace Understand
#3 Apply	*****#4 Analyze*****
Act Administer Articulate Assess Change Chart Choose Collect Compute Construct Contribute Control Demonstrate Determine Develop Discover Dramatize Draw Establish Extend Imitate Implement Interview Include Inform Instruct Paint Participate Predict Prepare Produce Provide Relate Report Select Show Solve Transfer Use Utilize	Break down Characterize Classify Compare Contrast Correlate Debate Deduce Diagram Differentiate Discriminate Distinguish Examine Focus Illustrate Infer Limit Outline Point out Prioritize Recognize Research Relate Separate Subdivide
*****#5 Synthesize*****	*****#6 Evaluate*****
Adapt Anticipate Categorize Collaborate Combine Communicate Compare Compile Compose Construct Contrast Create Design Develop Devise Express Facilitate Formulate Generate Incorporate Individualize Initiate Integrate Intervene Invent Make up Model Modify Negotiate Organize Perform Plan Pretend Produce Progress Propose Rearrange Reconstruct Reinforce Reorganize Revise Rewrite Structure Substitute Validate	Appraise Argue Assess Choose Compare & Contrast Conclude Criticize Critique Decide Defend Evaluate Interpret Judge Justify Predict Prioritize Prove Rank Rate Reframe Select Support

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Verbs Demonstrating Cognitive Activity

			Critical Thinking		
Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
know identify relate list define recall memorize repeat record name recognize acquire	restate locate report recognize explain express identify discuss describe discuss review infer illustrate interpret draw represent differentiate conclude	apply relate develop translate use operate organize employ restructure interpret demonstrate illustrate practice calculate show exhibit dramatize	analyze compare probe inquire examine contrast categorize differentiate contrast investigate detect survey classify deduce experiment scrutinize discover inspect dissect discriminate separate	compose produce design assemble create prepare predict modify tell plan invent formulate collect set up generalize document combine relate propose develop arrange construct organize originate derive write propose	judge assess compare evaluate conclude measure deduce argue decide choose rate select estimate validate consider appraise value criticize infer

Many existing course outlines have objectives which do not reflect the "active verbs" conveying critical thinking. It is usually the case that the course itself is taught in a way that incorporates critical thinking, but the course outline itself does not reflect those objectives and methodologies. Bringing the objectives into line is primarily a matter of reflecting upon those objectives which require analysis, synthesis, and evaluation. Some "before and after" examples are shown below.

FIRST EXAMPLE:

BEFORE: Know the significant art achievements of Renaissance through Modern Europe.

AFTER: Compare and contrast the art works in the same historical period with art works from other historical periods to ascertain their stylistic aesthetic and historical relationships.