

Levels of Knowledge

- Factual Knowledge – The basic elements students must know to be acquainted with a discipline or solve problems.
- Conceptual Knowledge – The interrelationships among the basic elements within a larger structure that enable them to function together.
- Procedural Knowledge – How to do something, methods of inquiry, and criteria for using skills, algorithms, techniques, and methods.
- Metacognitive Knowledge – Knowledge of cognition in general, as well as awareness and knowledge of one's own cognition.

Taxonomies of the Cognitive Domain

1. *Remembering*: Recognizing or recalling knowledge from memory. Remembering is when memory is used to produce definitions, facts, or lists, or recite or retrieve material.
2. *Understanding*: Constructing meaning from different types of functions be they written or graphic messages. Activities include interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining.
3. *Applying*: Carrying out or using a procedure through executing, or implementing. Applying refers to situations where learned material is used through products like models, presentations, interviews or simulations.
4. *Analyzing*: Breaking material or concepts into parts, determining how the parts relate or interrelate to one another or to an overall structure or purpose. Mental actions included in this function are differentiating, organizing, and attributing, as well as being able to distinguish between the components or parts. When one is analyzing he/she can illustrate this mental function by creating spreadsheets, surveys, charts, or diagrams, or graphic representations.
5. *Evaluating*: Making judgments based on criteria and standards through checking and critiquing. Critiques, recommendations, and reports are some of the products that can be created to demonstrate the processes of evaluation. In the newer taxonomy, evaluation comes before creating as it is often a necessary part of the precursory behavior before creating something.
6. *Creating*: Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing. Creating requires users to put parts together in a new way or synthesize parts into something new and different a new form or product. This process is the most difficult mental function in the new taxonomy.

Course Level Definitions

100

A 100 level course exists to introduce students to a particular subject or topic. No previous knowledge, except for what one might learn in high school, is expected of students enrolling in these courses.

While the course will employ learning levels such as factual knowledge, and concept knowledge, learning is focused on cognitive processes of remembering, understanding, and application.

Students enrolled in these courses are often first-year students or upperclassmen with a general interest. 100 level courses are often gateways to further study in a discipline and serve as prerequisites for more advanced study.

200

Unlike a 100 level course, a 200 level course assumes some level of skills' development. Some level of metacognition, awareness of one's own learning processes, not found in first-semester students, is assumed, and the importance of metacognition is more pronounced. A 200 level course may certainly introduce new experiences in factual, conceptual, and procedural knowledge, but the level of skills will emphasize application and analysis.

Students enrolled in these courses are often sophomores, very advanced first-year students, or students with a general interest in the discipline/subject.

300

A 300 level course continues to offer experiences in factual, conceptual, and procedural knowledge, but at an advanced level and, unlike a 200 level course, there is emphasis on the cognitive processes of analysis, evaluation, and/or creation. Students should be aware of their own learning processes, and be able to adapt metacognitive strategies to their coursework.

Student enrolled in these courses are generally junior and seniors or students who have fulfilled prerequisites allowing them to enroll.

400

A 400 level course synthesizes the four levels of knowledge – factual, conceptual, procedural, and metacognitive. Students are expected to use their skills as they generate new ideas, products, or ways of viewing things. Creative cognition includes designing, constructing, planning, producing and/or inventing to produce a senior project.

Students enrolled in these courses are seniors majoring in the discipline.