Embedded Assessment for SACS:
PHL 262 Critical Thinking and PHL 362 Contemporary Logic

There is one particular area where there is overlap in the material covered by these two courses, and that area is classical deductive logic. Three specific topics in this area that will be tested for are (1) the key concepts of deductive validity and soundness and (2) the immediate inferences that can be made in the Square of Opposition, and (3) forms of deductive reasoning such as Modus Ponens (Affirming the Antecedent) and Modus Tollens (Denying the Consequent).

(1) In the PHL 262 course the students' grasp of the relevant validity concept can be tested using multiple-choice items such as these:

1. Suppose that an argument has true premises and a true conclusion, then is it

a. deductively valid

b. not deductively valid

c. sound

d. none of the above

2. Suppose that an argument has true premises and a false conclusion, then is it

a. deductively valid

b. not deductively valid

c. sound

d. none of the above

3. Here is an example argument:

"All fish are cats, and all cats are reptiles, so all fish are reptiles." Is this argument:

a. deductively valid

b. not deductively valid

c. sound

d. none of the above

(2) The questions dealing with immediate inference and the traditional Square of Opposition can take the following form using nonsense predicates to emphasize that the inferences involved are not a matter of the specific content of the assertions but rather their formal, logical relations with one another.

4. If "All quinks are blunks" is TRUE, then "Some quinks are blunks"

a. has to be true

b. has to be false

c. cannot be decided to be true or false on the information given

5. If "Some quinks are not blunks" is FALSE, then "Some quinks are blunks"

a. has to be true

b. has to be false

c. cannot be decided to be true or false on the information given

6. If "No quinks are blunks" is TRUE, then "All quinks are blunks"

a. has to be true

b. has to be false

c. cannot be decided to be true or false on the information given

In the PHL 362 course the testing over the same material will require the production of explanations and examples:

7. Explain the concept of deductive validity, contrast it with soundness, and give both (1) an example of a valid but unsound argument and (2) an example of an argument that is not deductively valid.

8. Explain the Square of Opposition in both its modern version and the traditional version. Focus on the case involving Contraries to explain how the two differ from each other.

(3) In PHL 262 the patterns of argument can be tested for as an exercise in pattern recognition using questions like the following:

9. What is the name for this argument form: If P, then Q

$$\frac{\text{Not Q}}{\text{Not P}}$$

a. Denying the Antecedent   b. Affirming the Antecedent
c. Denying the Consequent d. Affirming the Consequent e. None of the Above

10. What does Affirming the Consequent look like?
a. If P, Then Q   b. P or Q   c. P or Q   d. If P, then Q e. None of the Above

$$\frac{P}{Q} \qquad \frac{P}{\text{NOT Q}} \qquad \frac{\text{NOT Q}}{P} \qquad \frac{Q}{P}$$

11. What is the name of this argument form: If P, then Q

$$\frac{\text{If Q, then R}}{\text{If P, then R}}$$

a. Affirming the Antecedent   b. Fallacy of Omitting the If   e. None of the above
c. Affirming the Consequent d. Hypothetical Syllogism

In PHL 362, the argument patterns can be used as part of more complex problems such as the following:

Translate this argument into symbolic statements and then demonstrate how the conclusion follows with deductive validity from the premises by using the standard argument patterns:

"Let's consider either going backpacking in Montana or sailing in the Caribbean for this summer's vacation." "Wait a minute, remember that if we go sailing, then Mary will get dreadfully seasick and if we go backpacking in Montana, then Charlie will complain all the time." "OK, since we do not wish either for Mary to be seasick or for Charlie to complain, then it looks like neither backpacking nor sailing is a good idea."