Instructional Objectives

**Instructional objective:** By the end of this [course, section of the course, week, lecture], the students will *be able to...* where “...” begins with an action word. Examples (grouped according to their levels on Bloom’s Taxonomy):

**Level 1: Knowledge**
- List [the steps in Polya’s problem-solving model]
- Identify [five key provisions of the Clean Air Act]
- Outline [the procedure for calibrating a gas chromatograph]

**Level 2: Comprehension**
- Explain [in your own words the role of each step in Polya’s model]
- Describe [each of the organelles found in animal cell cytoplasm]
- Interpret [the output from a SAS ANOVA calculation]
- Distinguish [between conduction and convection]

**Level 3: Application**
- Apply [Polya’s model to the solution of a given problem]
- Calculate [the probability that two sample means will differ by more than 5%]
- Solve [the compressibility factor equation state for P, T, or V from the other two]

**Level 4: Analysis**
- Classify [a complex problem solution in terms of the steps of Polya’s model]
- Derive [Poiseuille’s law for laminar Newtonian flow from a force balance]
- Explain [why we feel warm in 70°F air and cold in 70°F water]

**Level 5: Synthesis**
- Formulate [an alternative to Polya’s problem-solving model]
- Design [an experiment to determine the effect of temperature on information retention]
- Create [a problem involving material we covered in class this week]

**Level 6: Evaluation**
- Determine [whether your model or Polya’s is better, and explain your reasoning]
- Optimize [the given methanol production process design]
- Evaluate [the available options for expanding production capacity], select [one of the options], and justify [your choice]

**Non-instructional objectives:** ...the student will

- Know
- Learn
- Appreciate
- Understand...

These are critically important goals, but they are not directly observable and therefore not instructional objectives.

R. M. Felder & R. Brent, Effective Teaching, North Carolina State University, 2000
The Use of Multiple-Choice Items

Economics

1.) A paradox occurred last year in the housing market. A study showed that the average price of new homes increased 7.5 percent to $104,000, but more new homes were sold. The best explanation for the above "paradox" is a(n):

A. outward shift in the demand curve for homes
B. movement by home buyers along their demand curves for homes
C. decrease in supply of homes (higher asking prices for homes by contractors due to higher costs of production)
D. perfectly inelastic demand for homes, so that buyers must pay higher asking prices for homes because they have no alternatives

Biology

2.) Carbon monoxide (CO) is a "cell poison" that affects various enzymes of the cytochrome system (of terminal respiration). If CO is added to a sealed aquarium, which organism is most likely to survive? (Assume that CO is soluble in water).

A. Anaerobic bacteria living in the mud
B. Elodea (a green plant)
C. Green pond scum
D. Small animals called rotifers
E. Snails that can come up for air

Business Law

3.) James Riggs answered an ad in Soldier of Fortune magazine that promised $10,000 to men willing to participate in a mercenary mission. He traveled to Anderson, Indiana, where he and eight other men were arrested in an Anderson motel room and charged with conspiring to storm a Madison County courtroom and help a convicted murderer escape. Riggs was acquitted of the conspiracy charge, but six months later filed notice that he planned to sue for $300,000 in damages. Which intentional tort(s) could Riggs possibly prove?

A. Wrongful civil process only
B. Malicious prosecution only
C. Malicious prosecution and abuse of process
D. Abuse of process and wrongful civil process

Journalism

4.) Some media researchers and political scientists (specifically, the Survey Research Center at the University of Michigan) are concerned with the contemporary role of media in political affairs because:

A. the large corporations that now own many media news sources will be able to conspire to pick candidates and even select presidents
B. election returns in the eastern states may have an impact on voting behavior in the western states
C. personality factors may be more important than issues
D. media concentration means less information in the "marketplace of ideas"
E. segmentation strategies will ultimately mean that each individual bases his or her decision on a different set of facts
5.) As director of the CIA under President Reagan, William Casey helped to organize U.S. support for:
   A. Castro
   B. Contras
   C. PLO
   D. Sandinistas

Music

Use the following musical passage to answer the question.

6.) The top voice in measures 62-65 illustrates:
   A. hemiola
   B. interval contraction
   C. oblique motion
   D. parallel motion
   E. sequence and step progression

Geography

7.) If you were digging on a soil pit in the midlatitude desert and encountered a clay pan, your interpretation might be that:
   A. the soil is very young
   B. the pan may be relict from a time of warmer, drier climate of the past
   C. the pan may be relict from a time of cooler, wetter climate of the past
   D. the pan suggests nothing unusual because such a feature should develop easily in a midlatitude desert environment
   E. the soil is burned often