Parameters for Math CWO Pilot Assessment  
(Guidelines for Program Faculty and Dean)  
WITC – for 2012-13

What follows are the guidelines to help you select or design an assessment that will work for your program to assess the Math CollegeWide Outcome. The Math CWO:

Apply Mathematics – with these four indicators:
1) Select or devise a strategy for solving a problem involving mathematics
2) Extract relevant numerical data
3) Apply the strategy (show computations)
4) Communicate the results

Guidelines:
1) Framing – if you were on a hiring team and were to come up with a question or series of questions to convince a hiring team of the students’ adequacy of math proficiency – what would that be?

2) Select or design an appropriate problem – The problem should have elements that would enable assessment of all of the Math CWO Indicators – see the description that follows.

3) What the student will need to do:
   a) Select or devise a strategy for solving - Students will review the problem (with multiple forms of data – numerical and other), and identify/design a process they will use to solve the problem.
   b) Extract relevant data – Students will generate or identify data (numerical, and possibly some other information as well) that is relevant, then incorporate these data (and not use extraneous data) into their strategy (equation or other problem-solving process) to solve the problem or resolve the situation.
   c) Apply the strategy – Students will then implement their strategy (use the equation or other) to solve the problem. In that process, they will do the mathematical operations needed. This is where they must show their work - how they set up the problem, their calculations, etc.
   d) Communicate the results – This is perhaps the most important thinking phase of the math CWO indicators. After students obtain the solution, they must analyze the results to verify that their solution is both relevant and reasonable. They will then communicate the results (please identify the audience within the assignment – to whom should they present and defend their answer) in ways that are appropriate to their intended audience (including justification that their answer is reasonable based upon their analysis).

4) Please keep in mind:
   a) Use a multi-step problem – it is important that students need to be able to make more than one simple computation. An alternative may be to use multiple problems.
   b) Score-ability - Someone scoring the artifact should be able to discern whether or not the students were successful at each stage of the problem, or for each of the four Math CWO indicators. As such, it should be directly linked to the given problem, and not be too arduous for someone external to the program to score in a reasonable period of time. Toward this end, please provide a description of the problem, its purpose, and a score sheet.
   c) Realistic expectations in quantity and quality - The problem(s) and solution with the student-work should be realistic in volume/quantity/length.