

**Parameters for WITC's Math CWO Pilot Assessment
(Guidelines for Program Faculty and Dean)
2011-12**

Greetings,

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. These are general guidelines. Two persons from the Math CWO Subcommittee will support you in designing your assessment. The Math CWO:

Apply Math – 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 the 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 situation or problem** – Instructor or students may do this. 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** – They will generate or identify data (numerical or other information) that is relevant. They 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 (equation or other) to solve the problem. As part of this, they will do the mathematical operations needed – and at this stage **they must show their work** (how they set up the problem, their calculations, etc.).
 - d) **Communicate the results** – This is an important **thinking** phase of the math CWO. After they get the answer or solution, students analyze the results to verify that their solution is both relevant and reasonable. They will then communicate the results 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) **Please 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.
 - c) **Realistic expectations in quantity and quality** - The problem(s) and solution with the student-work should be realistic in volume/quantity/length.