

Millersville University, Winter 2020

Problem Solving Seminar: MATH 610

Varied: Faceto-Face: 58PM: 12/16; 12/18; 1/8; 1/13; 1/15

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Office hours Mondays/Wednesdays-5 (online/faceto-face). More availability on request.

NOTE- this class is officially not in session from Dec 24. 2. Although you may want to continue to work on the material, posts, etc, there will be no requirement to do so. Likewise, the professor will not be looking for or at anything specifically during that time. Although available by email, response time may be delayed during this time.

Course Description:

This course is designed for teachers and non-teachers to develop problem solving skills. 0 Tw (-)TJ -0.019

A. Describe current reform efforts in mathematics education related to problem solving as articulated in the Common Core Math Standards, 1Mrd,oa416 J C 416 J cc

1. Make sense of problems and persevere in solving them;
- 2.

Evaluation Components

1. Method "journal" (Objectives B, C, G) – 10%

You will need to keep a journal/notebook/packet to record your analysis of the overall method(s) in light of the example(s) or problem(s) and/or reactions of specific problems in the Assignment Folder. Consider any submissions to be "in progress" – submission may be a clearly marked accumulation of prior submissions or you may start a new journal entry each week.

- Note that this does not require completing the problem; just analysis and reactions. You can group problems together to make more meaningful or organized.
- Journals will be turned in weekly with specific assigned course topics:
 - Dec. 23, Jan. 3, 10, and 17
- *Example* (extremely brief, yours will be much longer) The first class in 0 (i) a 9 o 1.22 acused on three problem solving methods. I was familiar with all of n 0 (i) them, but learned a great deal as well. instance, "Drawing a Diagram" always seemed like a tool, rather than a method...is there a difference? When I worked on #4, I found that a diagram was essential because...while in #8 was initially conf1 (m s) Ga. as-6.9 (e 0.e) 9 (d)-4 (.) 3 (1) 3 () 10 (w) 6 (o)-2 (au)-4 l (d)-4 () to the 9-4-

3. Writing assignment/Discussion Thread Objectives A, B, C, D, E, F, G

6.

input from your classmate) You must cite any external evidence that is provided to you from your classmate

- d. Define your own study that holds to the “spirit” of the assignment. Check with the professor prior to completing it.

8. Interview Assignment (Objectives D, E, F) 10%

Have at least one middle or high school student solve one of the specified problems with you present. This student does not need to be your own friend or family member also works. Encourage them to show any work and to discuss out loud how they are solving it. You may wish to videotape your session to review later. You can give them a few minutes to plan ahead if you wish. You will then use the interview questions to probe further and report on your findings (see assessment #9). You will turn in the student’s work and your interview summary at the time of the presentation. No specific format is required.

9. Presentation (as part of #7/8) 5-10 minutes.

During the last class, you will share with the class your conclusions, observations, findings, etc. from both Assessments #7, and #8. This has a separate graded component, but in order to get full credit for #7/8, you must complete your presentation.

Final grades will be based strictly on a point system. The minimum percentage (rounding) to attain each letter grade will be as follows:

A (93%); A- (90%); B+ (87%); B (83%); B- (80%); C+ (77%); C (73%); C- (70%)

Required Materials

- o Herr and Johnson: Crossing the River with Dogs, Problem Solving