



University of Wisconsin-Milwaukee
&
Mathematics Institute of Wisconsin
Math Institute Fellows Cohort V
2020



Dates: January 13 – March 29, 2020
Time: January 14 & 28 and March 3, 2020, 4:30-5:30pm and additional time spent online
Location: Online, hosted by the Mathematics Institute of Wisconsin in Waukesha
Instructor: DeAnn Huinker Center for Mathematics and Science Education Research (CMSER)
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Course Information

Official UWM Course Number: CURRINS 580

Official UWM Course Title: Mathematics Education: Teaching with High Cognitive Demand Tasks

Course Description

As part of a statewide mathematics community of instructional leaders, participants will be supported throughout the ten-week course as they identify and implement high cognitive demand tasks, examine student work, and make instructional decisions. With only three required meeting, this online course is designed to fit participant's schedule.

UWM Credits: 3 undergraduate or graduate credits

Course Goals

- Participants will learn how to create, modify, and implement challenging, high cognitive demand, student-centered mathematics tasks.
- Participants will form a collaborative network of mathematics instructional leaders in Wisconsin to engage in the process of inquiry and experimentation.
Additional objective graduate credit:
- Participants will create a personal action plan documenting intended extension of learning to others using Professionalism as the guiding principle from *Principles to Actions: Ensuring Mathematical Success for All*.

Wisconsin Teacher Education Standards Applicable to this Professional Develop Course

Teaching Standard #4. *Teachers know how to teach.* The teacher understands and uses a variety of instructional strategies, including the use of technology, to encourage children's development of critical thinking, problem solving, and performance skills.

Teaching Standard #9. *Teachers are able to evaluate themselves.* The teacher is a reflective practitioner who continually evaluates the effects of his or her choices and actions on pupils, parents, professionals in the learning community and others and who actively seeks out opportunities to grow professionally.

Teaching Standard #10. *Teachers are connected with other teachers and the community.* The teacher fosters relationships with school colleagues, parents, and agencies in the larger community to support pupil learning and well-being and acts with integrity, fairness and in an ethical manner.

Required Course Readings

- (1) Common Core State Standards Initiative. (2010). *Common core state standards for mathematics (CCSSM)*. Available from <http://www.corestandards.org/the-standards>.
- (2) National Council Teachers of Mathematics (NCTM). *Principles to actions: Ensuring mathematical success for all*. Reston, VA.: NCTM, 2014.
- (3) Smith, Margaret Schwan, and Mary Kay Stein. "Selecting and creating mathematical tasks: From research to practice." *Mathematics Teaching in the Middle School* 3 (February 1998): 344-50.

Course Grading Procedures

Your grade for this course will be determined using the following percentage allocations.

Course Requirement	Course Percent of Grade	
	Undergraduate Students	Graduate Students
Attendance	20%	20%
Participation	20%	10%
Weekly Course Reflections	30%	10%
Math Tasks	30%	20%
Summative Reflection Essay	Not Required	20%
Professional Action Plan	Not Required	20%

Grades will be assigned on the following scale:

A 93–100% A– 90–92% B+ 87–89% B 83–86% B– 80–82% C+ 77–79%
C 73–76% C– 70–72% D+ 67–69% D 63–66% D– 60–62% F 0–59%

Course Expectations and Policies

Investment of Time: Study leading to one semester credit represents an investment of time by the average student of not fewer than 48 hours per credit earned. As a one-credit course, the expected time commitment from students is approximately 48 hours. As a three-credit course, the expected time commitment from students is approximately 144 hours (3 credits x 48 hours per credit earned).

Attendance: Attendance is vital to achieving the goals of this project course. Participants must attend all 3 sessions in order to be eligible for undergraduate or graduate credit.

Preparation of Assignments: Assignments are to be word processed unless otherwise stated in class or the syllabus. Present each assignment in a neat, organized, and clear manner. Keep a copy of all submitted assignments in case of questions or discrepancies.

Electronic Submission of Assignments: You are expected to provide many of your assignments in electronic format. Acceptable file types include MS Word, Google Doc, Pages, PowerPoint, Keynote, PDF, or JPEG, as appropriate to the assignment. Always name electronic files with your last name followed by a short description of the work. Also, do not include any periods other than before a file format extension. For example: jones-critique1-feb4.docx.

Late or Poor Quality Assignments: All assignments are to be turned in by midnight on the due date. You may request an extension by contacting the instructor prior to the due date provided you have a valid reason. Otherwise each late assignment is penalized by the equivalent of one letter grade for each day it is late. No rewrite of poor quality assignments allowed after the due date; meet with the instructor prior to the due date to review and discuss assignments. No extra credit assignments will be granted.

The following link provides additional information on general University Policies and Procedures:
<http://www.uwm.edu/Dept/SecU/SyllabusLinks.pdf>

Required Course Assignments

To receive UWM credit, you must attend the three required virtual meetings, actively participate throughout the ten weeks, and complete additional assignments. *All materials must be submitted online by April 1, 2020.*

1. Attendance

Attend and participate in all required course sessions.

2. Participation

Participate weekly in online asynchronous discussions, which includes posts on discussion boards and providing feedback to group members in the online forum. Participate in the course discussing by selecting a formative assessment process to choose, modify, implement and select student work samples for a mathematical task.

3. Weekly Course Reflections

Write reflective responses to questions and comments on discussion boards on a weekly or more frequent basis. These reflections should make specific connections to your learning and the course content.

4. Math Tasks

Implement high cognitive demand math tasks and share student work from the task with participants in the course.

5. Summative Reflection Essay

Write a 2-4 page reflective essay that illustrates how the concepts learned in the course align with the second *Mathematics Teaching Practice: Implement tasks that promote reasoning and problem solving* from Principles to Actions. Provide several examples from the course to support your analysis. Also, share how you could apply and extend the concepts learned to promote student learning in your current educational setting.

6. Professional Action Plan

Create a personal action plan documenting your intended extension of your learning to others using Professionalism as the guiding principle from Principles to Actions. This action plan is designed to assist you with your goal planning and implementation. In your action plan, identify at least two individual professional goals. For each goal, (a) provide a rationale describing how this goal will enhance your professional growth. (b) identify the strategies you will use to implement this goal, (c) describe the action steps you will take toward implementing of the goal, and (d) share how will you evaluate and measure the progress implementation of your goals.