



University of Wisconsin–Milwaukee
&
Mathematics Institute of Wisconsin
Developing Young Mathematicians Workshops
Spring 2022



Date: 9/29/21, 11/9/21, 2/3/22, 3/9/22
Time: 8:30 a.m. – 3:00 p.m.
Location: Mathematics Institute of Wisconsin in Waukesha

MIW Instructor: Paige Richards
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Course Information

Official UWM Course Number & Title:

Currins 580: Mathematics Education: Early Learning Workshop

Course Description

Research-based approaches to teaching mathematics to young children. Examination of learning progressions, concept-based strategies, math tools, and responsive instruction.

UWM Credits: 2-3 undergraduate or graduate credit

Course Goals

- Deepen understanding of early mathematics concepts through examination of learning trajectories
- Examine developmentally appropriate teaching practices that support students at all levels to develop their mathematical thinking
- Explore and discuss the benefits of learning through play to positively impact students' mathematical identities
- Study ways to integrate mathematical concepts into daily classroom routines

Required Course Readings

- 1) Clements, Douglas H., and Julie Sarama. *Learning and Teaching Early Math: The Learning Trajectories Approach*. Routledge, 2014.
- 2) *Wisconsin Model Early Learning Standards*. Wisconsin Department of Public Instruction, 2011. Available from <https://dpi.wi.gov/sites/default/files/imce/fscfp/pdf/ec-wmels-rev2013.pdf>.
- 3) Assigned journal articles and handouts.

Course Grading Procedures

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%

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

Course Requirement	Two-Credit Course Percent of Grade		Three-Credit Course Percent of Grade	
	Undergraduate Students	Graduate Students	Undergraduate Students	Graduate Students
Attendance and Participation	20%	20%	20%	20%
Focused Reflection on Learning	25%	15%	20%	10%
Homework – Readings and Written Reflections	35%	20%	30%	10%
Professional Action Plan	20%	10%	15%	15%
Professional Action Plan Implementation Paper	Not required	15%	Not required	15%
Learning Trajectory Project	Not required	20%	Not required	15%
Learning Trajectory Project Implementation Paper	Not required	Not required	15%	15%

Course 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.

Attendance: Attendance is vital to achieving the goals of this project course. Participants must attend the entire series of workshops, 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 Mathematics Institute of Wisconsin workshops and complete additional assignments. *All materials must be received by email to paige.richards@mathinstitutewi.org by Friday April 1, 2022.*

1. Attendance and Participation in the Workshop

Attend and participate in the workshops. Submit an attendance verification form signed by the instructor.

2. Focused Reflection on Learning

The purpose of this assignment is to professionally reflect upon content workshops and activities that you found to be meaningful for your practice. You will write a reflection paper (minimum 2-3 pages) that addresses the following: Identify 2-3 significant ideas from the workshop that deepened your knowledge of early mathematics learning. For each idea, (a) summarize your learning; and (b) explain why this was significant for you as a learner. Be sure to make specific connections to workshop content, ideas shared, and professional readings.

3. Homework: Readings and Written Reflections

Homework will be assigned as part of the workshop. The purpose of homework is to engage you further with the content and ideas from the sessions. The homework will include readings and written reflections.

4. Professional Action Plan

The purpose of this paper is to highlight your major learning from the workshop and to establish professional goals for further implementation into your instructional practice. You will write a paper (minimum 2-3 pages) that identifies at least two individual professional goals that you have for implementing the learning into your instructional practice. For each goal: (a) provide a statement of your professional goal in 1-2 sentences; (b) describe in detail approximately 3 action steps you will take toward implementing the goal; and (c) include how you will measure your success while engaged in the implementation process and what you hope to see as you implement your goals.

5. Professional Action Plan Implementation Paper

The purpose of this paper is to reflect upon the journey of implementing your Professional Action Plan. You will write a paper (minimum 2-3 pages) that highlights your experience while implementing each of the goals outlined in your action plan; your paper should address the following: (a) analyze the implementation of each goal and how these goals helped enhance your instruction; (b) evaluate the strengths and weaknesses of your implementation plan action steps; (c) describe the ways in which students benefited from your action plan; and (d) share next steps on how you will continue to grow professionally and share your learning with colleagues.

6. Learning Trajectory Project

The purpose of this assignment is for you to implement what you have learned about children's mathematical thinking by using a learning trajectory to guide your instructional practice. You will identify a learning trajectory to focus on, develop a plan for using that trajectory to inform your classroom practice, and reflect on how use of the trajectory informs your classroom practice. You will prepare a 2-3 page summary that addresses: a) the learning trajectory you selected and your rationale for choosing it; b) how you used the trajectory in your classroom to understand and develop students' mathematical thinking; and c) any challenges that surfaced during the implementation of your plan. Your submitted project should include your

implementation artifact (e.g., student interview protocol, lesson plans) and your 2-3 page summary.

7. Learning Trajectory Implementation Paper

The purpose of this assignment is to reflect upon the journey of implementing your Learning Trajectory Project. You will write a paper (minimum 2-3 pages) that describes your experience. Your paper should include the following: a) evidence of implementation, including a detailed description of the submitted evidence; b) reflection on the overall experience, making connections to workshop activities and/or course readings as relevant; c) explanation of how students responded to your project; d) discussion of possible next steps in order to further develop your understanding of the selected learning trajectory; and (e) a description of how you've shared/plan to share this experience with colleagues to impact your broader school community.