

NEW YORK UNIVERSITY
STEINHARDT SCHOOL OF EDUCATION
THE DEPARTMENT OF TEACHING AND LEARNING

CURRICULUM TRENDS IN HIGH SCHOOL AND COLLEGE MATH
Fall 2012

Course: MTHED-GE 2007

Instructor: Judith Green

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Class Location: TISC Room:LC13

Day and Time: Thursday, 4:55P.M. – 6:35P.M.

Office Hours: Wednesday and Thursday, 1:00-3:00P.M.
or by appointment

Office Location: 239 Greene Street 4th Floor

Course Description: This is designed to explore fundamental issues around mathematics curriculum, the curriculum reform movement and assessment as it informs instruction. Students will explore the new Common Core State Standards in Math, as well as examine, research and make recommendations related to mathematics curriculum development, curriculum reform and assessment issues related to mathematics achievement. Students will also reformulate curriculum using a 'backwards design' model.

Objectives:

To review and explore traditional and non-traditional math curriculum

To understand and apply a backwards design model

To evaluate curriculum design and implementation

To create assessments aligned with curriculum

To evaluate and review validity of assessments

To understand and apply current research recommendations in math curriculum issues, especially the Common Core State Standards for Mathematical Practice

Course Texts:

The course will use the following texts and you may select the format is most comfortable for you.

1. National Council of Teachers of Mathematics. (2000) **Principles and Standards for School Mathematics**, Book and E-Standards CD. Reston, Virginia. NCTM
2. McTighe, J., Wiggins, G. (2005) **Understanding by Design, 2nd Edition Alexandria**, VA: Association for Supervision and Curriculum Development, 2005.

Other requirements/resources:

1. **National Council of Teachers of Mathematics** membership to access publications and resources.
2. www.corestandards.org

Optional Resources:

National Council of Teachers of Mathematics. (1999) ***Mathematics assessment: A practical handbook for grades 9 through 12.*** Reston, Virginia. NCTM

Course Requirements:

Students are expected to attend and participate in all class sessions and complete all assignments. Homework will be assigned regularly and should be submitted at the next class session following the assignment. Guidelines and rubrics for special projects will be posted on Blackboard. All items to be submitted should be typewritten, 12-point and double spaced. Any mathematics computation should also be typed using MathType, Equation editor or other software that will allow math expressions and graphics.

Any student attending NYU who needs an accommodation due to a chronic, psychological, visual, mobility and/or learning disability, or is deaf or hard of hearing should register with the Moses Center for Students with Disabilities at 212 998-4980, 240 Greene Street, www.nyu.edu/csd.

Grading:

Specific guidelines for assignments and rubric will be handed out with assignments and are consistent with NYU Steinhardt Academic Standards.

http://steinhardt.nyu.edu/registration/standards#grading_policies

This course follows the NYU Steinhardt Policy on Academic Integrity

http://steinhardt.nyu.edu/policies/academic_integrity

Point Distribution

Attendance/Participation	20%
Homework Assignments	30%
Curriculum Project/Presentation	30%
Final	20%

100%-89%	A
88% - 87%	A-
86%- 85%	B+
84% - 82%	B
81% - 79%	B-
78% - 75%	C+
74% - 72%	C
71% - 70%	C-
69% - 65%	D
≤ 64%	F

Course Assignments Posted to Blackboard

**All items subject to change*

Session	Topic	Reading	Assignment
1. September 6	Course Overview, Intro CCSSM, NCTM Principles and Standards	NCTM Principles Common Core Standards	See Blackboard
2. September 13	Curriculum Influences, Politics, Society, Educators-TED talk	Specific New York State Common Core Learning Standards Mathematics	See Blackboard
3. September 20	Math Curriculum Characteristics- Primary to University	Wu; Herrera, et. al.; Kilpatrick; Riddle; Teitelbaum	See Blackboard
4. September 27	CCSSM in Classrooms	Conference Board of Mathematical Sciences	See Blackboard
5. October 4	Best Practices for Curriculum Implementation	New York State P-12 Common Core Learning Standards for Mathematics	See Blackboard
6. October 11	School Data to Inform Curriculum Choices	Nystart.gov Insideschools.org	See Blackboard
7. October 18	AAAS-Curriculum-Text Evaluation-Project 2061	Cuoco, et. al; Project 2061	See Blackboard
8. October 25	Intended Curriculum-Enacted Curriculum	Watts; Herbel-Eisenmann,	See Blackboard
9. November 1	Teacher Beliefs-Affect on Curriculum	Aguirre; Goldin, et. al.; Battista	See Blackboard
10. November 8	UbD-Stage 1 Essential Questions	McTighe, et.al. Chapters 1,2	See Blackboard
11. November 15	UbD - Stage 2 Evidence	McTighe, et.al. Chapters 3-5	See Blackboard
12. November 29	UbD - Stage 3 Assessment	McTighe, et.al. Chapters 6-8.	See Blackboard
13. December 6	Course Summary	UbD Unit	See Blackboard
14. December 13	Presentations	Final(Take Home)	See Blackboard
15. December 20	Final Due		

Readings

1. Aguirre, J. (2009). Teacher domain-specific beliefs and their impact on mathematics education reform. In J. Maab, & W. Schloglmann (Eds.), *Beliefs and attitudes in mathematics education* (pp. 45-58). Rotterdam, Netherlands: Sense.
2. Battista, M. T. (1994). Teacher Beliefs and the reform movement in mathematics education. *Phi Delta Kappan* , 75 (6), 462-463, 466-468, 470.
3. Cuoco, A., Goldenberg, E. P., & Mark, J. (1996). Habits of mind; an organizing principle for mathematics curriculum. (E. A. Maher, Ed.) *Journal of Mathematical Behavior* , 15, 375-402.
4. Conference Board of the Mathematical Sciences. (2010). *Common Standards and the Mathematical Education of Teachers*. Washington, DC: CBMS.
5. Goldin, G., Rösken, B., & Törner, G. (2009). Beliefs-No Longer the Hidden Variable in Mathematical Teaching and Learning Processes. In J. Maab, & W. Schloglmann (Eds.), *Belief and attitudes in mathematics education* (pp. 1-18). Rotterdam, Netherlands: Sense.
6. Herbel-Eisenmann, B. (2007). From intended curriculum to written curriculum: examining the "voice" of a mathematics textbook. *Journal for Research in Mathematics Education* , 38 (4), 344-369.
7. Herrera, T., & Owens, D. T. (2001). The 'new math'? two reform movements in mathematics education. *Theory Into Practice: Realizing Reform in School Mathematics* , 40 (2), 84-92.
8. Kilpatrick, J. (2001). Where's the evidence? *Journal for Research in Mathematics Education* , 32 (4), 421-427.
9. *New York State P-12 Common Core Learning Standards for Mathematics*. New York State Education Department, Curriculum and Instruction. NYSED.
10. Riddle, M. (2010, December). PISA: It's poverty not stupid. *The Principal Difference; bridgiving research and policy to practice for school leaders* .
11. Teitelbaum, S. (2011). Breaking down the PISA results. (S. Teitelbaum, Ed.) *News Leader* , 58 (5), 1, 7.
12. Watts, M. (1988). From Concept maps to curriculum signposts. *Psychology of Education* , 23 (74), 74-79.

13. Wu, H. (n.d.). *The mathematician and mathematics education reform*. Retrieved September 2010, from Department of Mathematics University of California, Berkeley : math.berkeley.edu/~wu/reform.pdf