Math 2010Q: Fundamentals of Algebra and Geometry I

Section 002: TR 2:00-3:15 PM, MONT 314

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R 12-1:30 pm

Course Information

Prereqs: PSYC 1100 and 3 credits of math other than MATH 1010.

Textbook: *Reconceptualizing Mathematics*, by Sowder, Sowder, and Nickerson (2nd ed.). The course textbook is available at the UConn Bookstore. Please obtain a copy at your earliest convenience (if you have not done so already).

Overview: This course is intended to conceptually understand the mathematics learned in the elementary grades. Not all children learn the same way, so it is important for elementary educators to be able to have deep content knowledge in order to support students' learning effectively. This course is meant to dovetail your math methods course, where the emphasis is placed on methods and strategies for presenting the mathematics. Per the university's description, the topics covered in this course includes (but is not limited to) number systems, operations on numbers, fractions, and ratios.

Goals and Objectives: As first mentioned in the Overview, this course is designed with preservice elementary educators in mind. In the classroom, the dynamism inherent in instruction necessitates deep conceptual understanding of the material so that it can be presented in appropriate ways. A common question asked by educators is "What do my students understand?" Effectively, this course endeavors to articulate what students are exposed to and determine what indeed their conceptions might be.

By the end of this course, you will be able to:

1. Define mathematics topics relevant to elementary education through writing and speaking,

2. Demonstrate flexibility in representing said mathematics topics by writing and speaking about the topics in various contexts and in different ways, and
3. Demonstrate proficiency in understanding possible student (mis)conceptions of said mathematics topics through examining student work.

Class Format: The vast majority of time spent in class will be based on work done in small groups along with whole-class discussions. In the small groups you will work together on worksheets. You are encouraged to help each other with the material. The whole-class discussions are designed to supplement the material on the worksheets. Lecturing will not be a significant amount of class time, so class notes will be primarily from the group work and the discussions.

Participation 10% of your overall grade will be on participation. See the Participation Guide for details on how you will be assessed (next page).

Attendance: Attendance is a critical element for succeeding in this class. Despite the fact that there is a textbook for this course, there is no substitute for attending class. Furthermore, meaningfully participating in discussions represents 10% of your overall grade for the course, so plan on attending each class.

If you must miss a class when a test or quiz is administered, please make every effort to e-mail me ahead of time so that you do not receive a grade of 0 for the assessment.

Faculty and instructors are strongly encouraged to make reasonable accommodations in response to student requests to complete work missed by absence resulting from religious observances or participation in extra-curricular activities that enrich their experience, support their scholarly development, and benefit the university community. Examples include participation in scholarly presentations, performing arts, and intercollegiate sports, when the participation is at the request of, or coordinated by, a University official. Such accommodations should be made in ways that do not dilute or preclude the requirements or learning outcomes for the course. Students anticipating such a conflict should inform their instructor in writing within the first three weeks of the semester, and prior to the anticipated absence, and should take the initiative to work out with the instructor a schedule for making up missed work. For conflicts with final examinations, students should contact the Office of the Dean of Students.

Class Participation Rubric

Class participation will be informally assessed on a continuing basis in both small group and whole group settings following the scale below.

Grade	***Expectations***
A	***Contributing to Others' Learning***[1]: This is the goal of the class. At this level you should be listening carefully to what others are saying, connecting what you hear to your own thinking, and asking questions that will help everyone involved better understand how we can support students' learning of math. You should also be sharing your thinking about the teaching of mathematics so that others can analyze and learn from it. The expectations for receiving this grade will increase as the semester goes on. That is, you should work to develop these skills, since it will require competence in them to earn the A-level grade by the end of the course.
B	***Contributing to One's Own Learning***: Here you are clearly engaged in learning the teaching of mathematics, but haven't moved outside yourself to interact well with others. It generally means doing quality work, but not making an effort to share your thinking with others or not showing interest in making sense of their thinking. In the context of whole class discussion, it would mean listening and learning, but minimally sharing your ideas or observations with the class.
C	***Getting By***: This involves showing up, minding your own business, and following directions.
D	***Interfering with Learning of Self or Others***: There are various ways one can do this; the most obvious are distracting group members from the task at hand or being belligerent about what one is asked to do. More subtle ways include implying someone is not smart because they don't have a quick solution to a problem or discussion point, or interrupting when someone is sharing thoughts; thus undercutting their opportunity to think carefully about a problem.
F	***Not there***: This includes not being there physically and/or mentally. Note that whenever you are absent, it is your responsibility to make up the work, preferably before the next class so that you are able to participate in class. See syllabus for responsibilities associated with missing class.

[1] This does NOT mean telling or showing someone else how to do something.

Faculty and instructors are also encouraged to respond when the Counseling Program for Intercollegiate Athletes (CPIA) requests student progress reports. This will enable the counselors to give our students appropriate advice.

Readings: Readings from the textbook for each class are given in the Class Schedule. It is important to keep up with the readings since the information supplements classroom instruction. Please take careful notes as quizzes and tests can contain questions from the readings.

Homework: Also in the Class Schedule are homework problems that are designed to help you understand the concepts covered in class. It is impossible to exhaustively list problems that cover all the conceptual content of the course, but they serve to examine your depth of knowledge. Periodically, these will be collected and assessed as a worksheet. An announcement will be made ahead of time when a homework assignment will be collected.

Quizzes: An announcement will be made ahead of time before a quiz is given. If you must be absent when a quiz will be given, please make every effort to inform me before that class day so that arrangements can be made.

Tests: There will be two in-class tests and a cumulative final exam. No makeups will be given and the dates are scheduled so please plan accordingly:

Test #1: Tuesday, October 4th (Week #6)
Test #2: Thursday, November 10th (Week #11)
Final Exam: TBA (Week #15)

As is the policy with quizzes, please make every effort to e-mail me ahead of time if you must miss Test #1 or Test #2. If you must miss the Final Exam, you must contact the Dean of Students to have it rescheduled.

Grading:

Participation	10%
Worksheets/Quizzes	20%
Test #1	20%
Test #2	20%
Final Exam	30%

Minimum grades have been established for letter grades:

A: 93	B-: 80	D+: 67
A-: 90	C+: 77	D: 63
B+: 87	C: 73	D-: 60
B: 83	C-: 70	F: 0

Other Relevant Information

Various policies implemented by the University Senate, the Office of Institutional Equity, the Office of the Provost, and Community Standards can be found on the webpage http://provost.uconn.edu/syllabi-references/.

Tentative Class Schedule:

Week	Date	Readings	HW Problems
1	8/30	1.1, 1.3, 2.1	1.1: 2,4 1.3: 5,6 2.1: 2,4,5,7
	9/1	2.2	2.2: 1-3,6,8,9 + HCT
2	9/6	2.3	2.3: 19-25
	9/8	2.3, 2.4	2.3: 2,3,5,7,8,13 2.4: 2(a,b),4,7,9
3	9/13	2.4, 3.1, 3.2, HCT	2.4: 2(c,d),5,8 3.2: 1-4,7,8,10
	9/15	2.5, 3.1, 3.3	3.1: 7-9 3.3: 2-6
4	9/20	3.4	3.4: 1(a,b),2,4-6,8,14,15,23,24
	9/22	3.4, 3.5	HCT
5	9/27	3.5, 3.6, 3.7	HCT
	9/29	3.6	
6	10/4	**Test #1**	
	10/6	4.1, 4.2	HCT
7	10/11	4.1	HCT
	10/13	6.1, 6.2	6.1: 1,2(b,c),3,4,6,9(a-c),12,15,18,24 6.2: 2-5,7,12(a)
8	10/18	6.1, 6.3	6.1: 5,11,13,17,23,25 6.3:1,3,9-13 (odd) + HCT
	10/20	6.3	6.3: 2,4,5,7 + from supplementary exercises: 1-4, 9
9	10/25	6.4	6.4: 2,5,6,8-10,13,16
	10/27	7.1, 7.2	HCT
10	11/1	7.3	7.3: 3,5,6,10,14(c,e). + from supplementary exercises: 1(b,e)
	11/3		HCT
11	11/8	7.4	
	11/10	1.1	**Test #2**
12	11/15	8.1	8.1: 1-3
	11/17	8.2, 9.1	8.2: 1,4,5,7,8 + HCT
Thanksgiving Break (11/21-11/25)			
13	11/29	9.2	HCT
	12/1	5.1	HCT + 5.1: 1-3,5
14	12/6	5.1, 5.2, 6.4	HCT + 5.2: 1-3
	12/8	6.4	6.4: 17

Final Exam (Date/Time TBA)