New York University  
Steinhardt School of Culture, Education, and Human Development  
Department of Teaching and Learning

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**Course Description:**
This course engages prospective teachers in cycles of teaching which involve understanding the mathematical content, generating appropriate assessment, planning the lesson, teaching the lesson, reflecting on the process and results of the lesson.

The course will emphasize teaching that focuses on conceptual understanding, the most important and most difficult type of teaching.

**Course Overview:**

**Assumptions**

- All students have the capacity to learn mathematics with understanding and deserve to have teachers who work toward this end.
- There is an on-going, major effort to reform mathematics teaching in US schools. Through this course we are trying to bring about a practice of mathematics teaching that is not common in US schools today. Therefore, this course will likely challenge images you have of what it means to teach mathematics.
- Learning to teach mathematics well is a long endeavor, much longer than the duration of a course or two. This course is a beginning step in that process.
- No one knows all they need to know in order to teach mathematics well. This should not be taken as discouraging; rather, this assumption is based on an appreciation that:
  - learning and teaching are problematic (i.e., there is no right way);
  - inquiring into mathematics, mathematics learning, mathematics teaching, and the mathematics of children is the ongoing work of teachers regardless of years of experience;
  - learning from one’s teaching is possible and productive; and, developing an evolving vision of what school mathematics might be is a characteristic of good teachers of mathematics.
- Good teachers are aware that they do not know how to teach what they are teaching. Good teachers know how to think about the problems of teaching and the kinds of things to do and pay attention to in order to teach more effectively. They make informed decisions and justify them based on a deep understanding of the related issues of mathematics, mathematics learning, and mathematics teaching. Often good teachers’ lessons do not accomplish the teachers’ goals; however, they know how to learn from the previous lessons so that the next attempt is better informed and more effective.

This course is designed to prepare K-6 mathematics teachers with the goal to help develop your mathematical and pedagogical understandings for that grade range. Thus, it is training for a career of diverse teaching assignments, not merely for your current placement.

This is part of your professional education. It will impact whether you work as a teacher and the effectiveness of that work throughout your career. Approaching the course from the perspective of a student, trying to merely be successful in completing the course (or get a good
grade), will limit what you take from the course. Approaching it instead as a beginning professional in the field of education - evaluating what you understand and working toward deeper understanding of what you need to learn - will provide you with a strong foundation as you begin your career.

**Learner Objectives:**

- Improve your understanding of important K-6 mathematical concepts.
- Improve your understanding of what it means to understand mathematics.
- Improve your understanding of the nature of mathematics: what is important, how it is practiced, and how mathematical validity is determined.
- Help you develop a vision of good school mathematics.
- Help you come to see mathematics, learning, and teaching as problematic and to develop an inquiry approach to and an ability to reflect on these domains.
- Increase your understanding of K-6 students’ mathematical thinking.
- Increase your understanding and skill related to teaching mathematics in grades K-6.
- Increase your ability to create a thriving, supportive classroom mathematics community.

**Required Readings:**

The textbook for the course is:


It will be supplemented with other readings.

**Course Requirements:**

Course readings, assignments, class participation, final project.

**Class Participation:**

Class participation is comprised of the following: attendance, preparation for class, and contributions to small group and whole class discussions and activities. Attendance is expected; the interactions and activities in class are the most important parts of this course. Participation in whole-class discussions is expected to be regular, to contribute to the class, and to be characterized by a willingness to take risks. Statements or questions about what you are uncertain about often lead to opportunities to increase your understanding and the understanding of others in the class.

Any unexcused absences will lower your participation grade. Multiple unexcused absences may result in a conference and possibly your withdrawal from the course.

If you find it difficult to spontaneously participate in whole class discussions, come prepared with questions from the readings or assignments. Come prepared to share an experience or question from your teaching placement. Be willing to share ideas that your small group discussed. Everyone can participate in these ways.

Participating actively will directly affect how much you learn during the course. Your ideas, even the ones you think are ill formed and half baked, will positively contribute to what others learn. Sharing ideas publicly is part of what teachers do (with collaborating teachers, at faculty meetings, at board of education meetings, at parent meetings), so it is an important part of your professional education.

A = Participation in whole-class activities (questions and comments) is not only consistent but very thoughtful in nature.
B = Participation in whole-class activities is consistent.
C = Participation in whole-class activities is intermittent.
D = Participation is restricted to small group activities.

**Grading Policy:**
The grade for the course will be determined from four sources: Class Participation, Readings, Assignments, and Project.

The grade will be calculated as follows:

1. Class Participation: 25%
2. Readings: 10%
3. Assignments: 25%
4. Final Project: 40%

**Students with Disabilities:**

Students with physical or learning disabilities are required to register with the Moses Center for Students with Disabilities, 726 Broadway, 2nd Floor, (212-998-4980) and are required to present a letter from the Center to the instructor at the start of the semester in order to be considered for appropriate accommodation.

**Academic Integrity:**

The following has been retrieved from NYU Steinhardt’s Policies and Procedures (available from http://steinhardt.nyu.edu/policies/academic_integrity):

The relationship between students and faculty is the keystone of the educational experience in The Steinhardt School of Culture, Education, and Human Development at New York University. This relationship takes an honor code for granted. Mutual trust, respect and responsibility are foundational requirements. Thus, how you learn is as important as what you learn. A university education aims not only to produce high quality scholars, but to also cultivate honorable citizens.

Academic integrity is the guiding principle for all that you do; from taking exams, making oral presentations to writing term papers. It requires that you recognize and acknowledge information derived from others, and take credit only for ideas and work that are yours.

You violate the principle of academic integrity when you:

- Cheat on an exam;
- Submit the same work for two different courses without prior permission from your professors;
- Receive help on a take-home examination that calls for independent work;
- Plagiarize.
Plagiarism, one of the gravest forms of academic dishonesty in university life, whether intended or not, is academic fraud. In a community of scholars, whose members are teaching, learning and discovering knowledge, plagiarism cannot be tolerated.

Plagiarism is the failure to properly assign authorship to a paper, a document, an oral presentation, a musical score and/or other materials, which are not your original work. You plagiarize when, without proper attribution, you do any of the following:

- Copy verbatim from a book, an article or other media;
- Download documents from the Internet;
- Purchase documents;
- Report from other's oral work;
- Paraphrase or restate someone else's facts, analysis and/or conclusions;
- Copy directly from a classmate or allow a classmate to copy from you.

Your professors are responsible for helping you to understand other people's ideas, to use resources and conscientiously acknowledge them, and to develop and clarify your own thinking. You should know what constitutes good and honest scholarship, style guide preferences, and formats for assignments for each of your courses. Consult your professors for help with problems related to fulfilling course assignments, including questions related to attribution of sources.

Through reading, writing, and discussion, you will undoubtedly acquire ideas from others, and exchange ideas and opinions with others, including your classmates and professors. You will be expected, and often required, to build your own work on that of other people. In so doing, you are expected to credit those sources that have contributed to the development of your ideas.

Avoiding Academic Dishonesty

- Organize your time appropriately to avoid undue pressure, and acquire good study habits, including note taking.
- Learn proper forms of citation. Always check with your professors of record for their preferred style guides. Directly copied material must always be in quotes; paraphrased material must be acknowledged; even ideas and organization derived from your own previous work or another's work need to be acknowledged.
- Always proofread your finished work to be sure that quotation marks, footnotes and other references were not inadvertently omitted. Know the source of each citation.
- Do not submit the same work for more than one class without first obtaining the permission of both professors even if you believe that work you have already completed satisfies the requirements of another assignment.
- Save your notes and drafts of your papers as evidence of your original work.

Disciplinary Sanctions
When a professor suspects cheating, plagiarism, and/or other forms of academic dishonesty, appropriate disciplinary action may be taken following the department procedure or through referral to the Committee on Student Discipline.

Departmental Procedure
The Professor will meet with the student to discuss, and present evidence for the particular violation, giving the student opportunity to refute or deny the charge(s).

If the Professor confirms the violation(s), he/she, in consultation with the Program Director and Department Chair may take any of the following actions:
- Allow the student to redo the assignment
- Lower the grade for the work in question
- Assign a grade of F for the work in question
- Assign a grade of F for the course
- Recommend dismissal

Once an action(s) is taken, the Professor will inform the Program Director and Department Chair, and inform the student in writing, instructing the student to schedule an appointment with the Associate Dean for Student Affairs, as a final step. Copies of the letter will be sent to the Department Chair for his/her confidential student file and the Associate Dean for Student Affairs. The student has the right to appeal the action taken in accordance with the School's Student Complaint Procedure as outlined in The Steinhardt School of Culture, Education, and Human Development Student's Guide.

**Referral to the Steinhardt Committee on Student Discipline**

In cases when dismissal is recommended, and in cases of repeated violations and/or unusual circumstances, faculty may choose to refer the issue to the Committee on Student Discipline for resolution, which they may do through the Office of the Associate Dean for Student Affairs.

The Steinhardt School Statement on Academic Integrity is consistent with the New York University Policy on Student Conduct, published in the NYU Student Guide.