**York College of the City University of New York**

**Math 271: Math for Elementary School Teachers (section PQ)**

**Spring 2013**

Instructor: Dr. Lidia Gonzalez Course Times: Tuesdays & Thursdays

E-mail: lgonzalez@york.cuny.edu2:00pm – 3:50pm

Office: AC/2C07d Location: AC/2C06

Phone: (718) 262-2551

Office Hours: Tuesdays and Thursdays 4:00pm – 4:50pm & by appointment

Course Description: Mathematical reasoning, problem-solving, elementary theory, structures and concepts of arithmetic, numeration systems, integers, rational and real numbers, number theory, elementary probability and statistics.

Credits: This is a 4-credit course.

Pre-requisites: Mathematics 101 (Algebra and Trigonometry), Mathematics 102 (Intermediate Algebra) or passing the Math Skills Test. This class is not open to students with credit in Math 122 (Analytic Geometry and Calculus II).

Co-requisites: None

Learning Objectives: After completion of the course, students should be able to:

(1) Understand basic concepts and properties of the real numbers and various subsets of the real numbers.

 (2) Describe and carry out basic operations using multiple models, methods and manipulatives.

 (3) Understand and calculate statistical measures including arithmetic mean, median, variance and standard deviation.

(4) Recognize, construct and analyze multiple visual representation of numerical data.

 (5) Understand basic properties of probability.

(6) Understand fractions, ratios and percentages.

(7) Recognize and identify the properties of two-dimensional figures and

three-dimensional solids.

 (8) Understand and graph functions of various types

(9) Apply essential mathematics literacy in quantitative and mathematical reasoning

Text Books: The following, required texts will be used in the class.

(1) *A Problem Solving Approach to Mathematics for Elementary School Teachers* (11th Edition) by Billstein, Libeskind & Lott.

\*\*\*Please be sure you either:

(A) Buy the package from the York College Bookstore that includes the My Math Lab Access Code as this is required for the course

 OR

(B) Buy an access code for MyMathLab at: http://www.coursecompass.com/html/student\_register.html

This will give you access to the software & an electronic copy of the text

(2) *The Number Devil: A Mathematical Adventure* (1998). Enzenberger, H. M. New York: Henry Holt & Co., LLC

Supplies: Students are required to bring a notebook, pens/pencils and a calculator to class each day. Your phone is not to be used as a calculator!

**Course Requirements**

Homework: Homework will be assigned regularly. Most homework assignments will be completed through the MyMathLab software package. Such assignments will have a due date and time by which they are to be completed. You may attempt the homework problems as many times as you wish prior to the deadline. At times paper/pencil assignments will be given. These are to be completed on looseleaf and submitted in class to be graded. Late homework is not accepted and a grade of zero is assigned for missing assignments. Homework will be reviewed as needed.

Exams: There will be 2 in-class exams each on specific topics covered in class. Additionally, the class will end with a cumulative, final exam. The final exam will be weighted more heavily than the other exams.

Projects: Two projects will be assigned as part of the course: one will focus on the common core state standards for mathematics (CCSS) in the elementary grades along with state assessments in mathematics for these grades. The other will be related to *The Number Devil*. More information on each of these projects will be given as the semester progresses.

Reflections Students are expected to attend two scholarly events at York College. These can include but are not limited to weekly Math/CS Club talks, monthly Tensor talks and Future Teacher Club Events. Such events will be announced in class. Students with information about additional events are encouraged to share this with the class. For each event students will complete and submit a reflection in which they summarize the event and reflect upon it. Though only two are required, students are, of course, encouraged to attend as many events as possible as these will enhance the student’s education at York College.

Participation: The success of our class depends on the active participation of the students. Students are expected to attend class regularly, complete all the required assignments and actively engage in activities. Attendance will be taken at all class sessions. In-class work such as informal writing assignments, open-ended problems and short quizzes may be undertaken in class. Some of this work will be collected and counted towards a student’s participation grade. In-class work cannot be made up if missed.

Portfolio: Students will be expected to organize their work for the semester in a portfolio to be turned in at the conclusion of class. The portfolio will be reviewed and returned to the student. The portfolio is meant to serve as a resource for the student in future coursework and when they begin teaching. It is strongly suggested that the portfolio be completed in pieces as the semester progresses rather than at the conclusion of the semester.

Blackboard: This class has a site on Blackboard where students can view their grades and access all handouts (including this one) that are distributed in class. Students are strongly encouraged to check the Blackboard site regularly to access course information. Students unfamiliar with Blackboard can attend workshops given through the academic computing office.

Grading Policy: The following will be used to determine a student’s grade in the course.

Homework: 25% Exams: 25% Participation: 5%

Projects: 15% Final Exam 20% Portfolio 5%

Reflections 5%

The York College grading scale will be used to determine final course grades. Information about grading can be found at: <http://www.york.cuny.edu/academics/advisement/gradreq/graduation-requirements/grades>

**Schedule of Topics**

The following table outlines the topics that will be covered as part of the course and a timeline for their completion. Please note that this is a tentative outline that is subject to change as the semester progresses.

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| **Dates** | **Chapter/Sections** | **Topics of Study** | **Notes** |
| January 29 |   | Introductions & Review syllabus; Portfolio Information |  |
| January 31 | 1.2 | Induction, Deduction & Sequences | HW 1 Due: Two-page letter of introduction & math biography  |
| February 5 | 1.3 | Logic |   |
| February 7 | 2.1 | Numeration |  |
| February 12 | CLASS DOES NOT MEET | LINCOLN’S BIRTHDAYCOLLEGE IS CLOSED |   |
| February 14 | 2.1 | BasesCLASSES ON A TUESDAY SCHEDULE |  |
| February 19 | 2.2 – 2.3  | Sets, Set Operations & Subsets of the Real Numbers |   |
| February 21 | 3.1 – 3.4 | Operations & Algorithms for Whole Numbers, |  |
| February 26 | 3.5 | Mental Math & estimation |  Exam 1 Review Sheet Distributed |
| February 28 | 4.1 – 4.3 | Divisibility, Primes, Composites, GCF & LCM |  |
| March 5 | 5.1 – 5.2 | Integer Operations |  |
| March 7 | EXAM 1 | Sections 1.2 – 5.2 |  |
| March 12 | 6.1 – 6.3 | Rational Numbers |  |
| March 14 | 6.4 | Ratios & Proportions |  |
| March 19 | 7.1 – 7.4 | Decimals, Percentages & Interest | Project Related to *The Number Devil* text distributed |
| March 21 | 8.1  | Real Numbers, Order of Operations, Roots & Exponents |  |
| March 26 | CLASS DOES NOT MEET | SPRING RECESS |  |
| March 28 | CLASS DOES NOT MEET | SPRING RECESS |  |
| April 2 | CLASS DOES NOT MEET | SPRING RECESS |  |
| April 4 | 8.3 – 8.4 | Equations/Functions |  |
| April 9 | 8.5 | Equations in a Cartesian Coordinate System | Project Related to *The Number Devil* text due |
| April 11 | 9.1 – 9.2 | Probability | Exam 2 Review Sheet Distributed |
| April 16 | 9.4 | Odds/Conditional Probability/Expected Value |   |
| April 18 | 9.5 | Permutations & Combinations | Project Related to CCSS/State Assessments Distributed |
| April 23 | EXAM 2 | Sections 6.1 – 9.5 (excluding 9.3) |  |
| April 25 | 11.1 – 11.2  | Angles, Lines & Measurement |  |
| April 30 | 11.3 – 11.4 | Symmetry & Tessellations |  |
| May 2 | 13.1 – 13.3 | Transformations |  |
| May 7 | 13.4 & 14.1 | Tessellations and Area | Final Exam Review Sheet Distributed |
| May 9 | 14.2 | Pythagorean Theorem, Distance Formula & Equation of a Circle |  |
| May 14 | 14.4 – 14.5 | Surface Area, Volume, Mass & Temperature |  |
| May 16 | Review | Review | Reflections & Project Related to CCSS/State Assessments Due |
|  | Final Exam  | Final exam as per York schedule; Note that the final exam is cumulative | Final Exam Review Sheet & Portfolio Due |

Online/Hybrid Course Statement:

Although this is not an online or hybrid course, students are expected to use the MyMathLab Software Package that comes as part of their textbook to complete homework assignments. Students are also encouraged to check Blackboard for information and updates about class. It is a student’s responsibility to ensure that the e-mail addresses associated with both MyMathLab and Blackboard are current.

**Important Policies**

It is your responsibility as a student to familiarize yourself with the following important policies.

**Policy on Academic Integrity, Cheating and Plagiarism**

York’s Academic Integrity Policy and Procedures, developed to conform to the CUNY policy on Academic Integrity, outline College protocol for (1) promoting academic integrity at the College; and (2) dealing with violations of academic integrity. Academic Dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion. Academic dishonesty includes cheating and plagiarism. This policy will be strictly adhered to. Students can familiarize themselves with this policy by downloading a copy of it in pdf form at http://york.cuny.edu/president/legal-compliance/legal-affairs/cuny-legal-policies-procedures/Academic-Integrity-Policy.pdf/view

**Policy on INC grades**

York College’s policy on INC grades will be adhered to. Students should familiarize themselves with the policy. Additionally York College’s grading scale will be used to determine final course grades. All of York’s grading policies can be found at: http://york.cuny.edu/academics/policies/grading-policies

**Policy on accommodations for disabled students**

York College’s policy on accommodations for disabled students will be strictly adhered to. Students with documented disabilities are entitled to receive accommodation, including extra time on exams, tests, projects and assignments. The Office of Services for Students with Disabilities located within the Counseling Center in AC/1G02 provides a wealth of support and services including accommodations such as: extended testing time, large print text, adjustable tables, and computers services provided for by OSD. To better ascertain if you are eligible for services please stop by and speak with a disabilities specialist. The Office of Student Disabilities (Room AC-1G03) can evaluate students. More information is also available online at http://york.cuny.edu/student-development/ossd/

**Policy on Student Evaluations**

Department policy requires that the following statement must be included in all department syllabi: All student evaluations of teaching must be given to the class, collected from the class and taken to the office of public safety by a student who is registered for the class. No faculty members may be present in the room during the entire process.

**Student support resources on campus**

The following offices and programs are available on campus to support students as needed. Please note that this is not an exhaustive list and other programs and offices do exist. When unsure you can conduct a search on the **York College website** located at www.york.cuny.edu or access the **York College Bulletin** (also searchable) online at http://york.cuny.edu/search?SearchableText=york+bulletin

The **Academic Achievement Center** located in the library (AC-3H13) offers tutoring for students in various subjects including pre-calculus. Tutoring is free to students who schedule appointments with tutors at times that fit their schedule. If you are having difficulty in the course you are strongly advised to use this resource. The academic achievement center can also be reached by phone at (718) 262-2831 or via e-mail at aac@york.cuny.edu.

The **Writing Center** located in Room AC/1C18 offers assistance to students seeking help with research and writing skills. The office also contains computers and printers for student use. The center’s phone number is (718) 262-2494.

Students needing assistance with their English can stop by Room AC-3C08 to receive English as a Second Language (**ESL**) support.

Students in the **SEEK** program can stop by the SEEK Office for assistance in AC-1C08.

For a complete listing of **Tutorial Services** visit the web:www.york.cuny.edu/student/tutoring/ where you would see that a variety of tutorial programs are offered on campus.

The **Academic Advisement Center** located in Room AC 2C01 provides advisement related to general education and academic major requirements, the CUNY Proficiency exam (CPE), and the Committee of Academic Standards to all students. Students beyond the freshman year who are undecided as major, and non-matriculated students receive their principal advisement in the Center.

The **Office of Counseling** (AC-1G02) is committed to providing a broad range of high quality, innovative, and ethical service that address the psychological, educational, social, and developmental needs of YORK students. Services provided include: academic advisement and counseling, alcohol and drug prevention counseling, career counseling, crisis counseling, graduate school counseling and individual counseling. They can be reached at 718-262-2272.

The **Academic Computing and Educational Technology Center** provides technical support for students in utilizing Blackboard, the CUNY portal, York e-mail and other programs. There is a help desk located in AC/2E03, one of the computer labs. The IT help desk can also be reached by phone at (718) 262-5300 or via e-mail at helpdesk@york.cun.edu. Additionally the center runs technology workshops for students. More information can be found online at http://york.cuny.edu/it/acet/academic-computing-and-educational-technology/

**Computer Labs:** A large number of Internet-capable computers are assigned to College-wide computer labs, specialized departmental labs, learning centers and the Library. The Classroom Building (C201) houses a College-wide drop-in computer lab. There is also a computer laboratory complex in the Academic Core Building in Room AC-2E03. These labs are fully equipped with computers and networked laser printers.

The York College **Library** is located in AC-3G01. Students can use the library for research, to obtain books (also books on reserve), periodicals and other resources. The library runs workshops on information literacy, using the internet, using blackboard and other related topics. The library url is http://york.cuny.edu/library

The **Mathematics Learning Center** (AC/3E07) provides free tutoring for mathematics. For more information please stop by.