Math 1175, Fundamentals of Mathematics
Mathematics and The Brooklyn Bridge

Mathematics is the language of science and, while it can be abstract, we study it because it describes the world around us. This course provides an introduction to two fundamental areas of mathematics, the study of shapes and their properties (geometry) and the study of variables and their relationships (algebra). To help make these abstract topics concrete we have chosen to focus on the Brooklyn Bridge -- this world-famous structure dominates our neighborhood and is of immense economic, political and practical importance to millions of people. Throughout the course we will encourage you to think about the ways in which mathematics can be used to understand and describe many aspects of the bridge.

Section Info: This website will be shared by two sections of the course. While these sections have different professors and meet in different rooms, we will be working closely together throughout the semester and each of you will have the opportunity to work with students from the other section. NOTE: it is important that you attend the section you are officially enrolled in.

Section 5147	Section 5148
Instructor: Professor Ezra Halleck	Instructor: Professor Jonas Reitz
Class Meets: T/Th, 2:15 - 3:55 pm, room N416	Class Meets: T/Th, 2:15 - 3:55 pm, room N705
Office Hours: N726 T 1-2, 4-5 and by apt	Office Hours: N707 T 12-1 and by apt
MathZone Section Enrollment Code: **8F6-6B-C33**	MathZone Section Enrollment Code: **863-9C-3DE**

Books: There are two books for the course:
Africk, H. <u>Elementary College Geometry</u> (1997), Thomson Learning
Miller, O'Neill & Hyde, <u>Intermediate Algebra, custom edition</u>(2011), McGraw Hill
> *NOTE: you SHOULD purchase a new copy of the Intermediate Algebra textbook to obtain access to the MathZone website (for completing homework). See **MathZone** below for details.*

Calculator: A scientific calculator with the trigonometric functions (sin/cos/tan) is required (for example the TI-30XIIS). For those of you in programs which require MAT 1375 Precalculus, you will need a graphing calculator (e.g., TI 84) and might consider purchasing one now.

Grading. Your grade will be based on the following:
Homework (20%). You must complete assignments on MathZone to earn homework points (see "About" for information on how to get started). Homework will be assigned for each topic through the MathZone website and must be completed by their due date. Over the course of the semester, you may ask for a 2 day extension for only one assignment. You will only need to complete 80% of the assigned problems to earn the required points (the total required points will be provided near the end of the semester, when all assignments have been created). Any additional points earned will count as bonus credit (50% value of required points).
> *NOTE: The first two weeks and last two weeks of the course consist of geometry, and the MathZone website does not have good problems for these topics. We will assign problems from the book or other sources so that you can practice this material, but these additional assignments will NOT be collected or graded. However, we strongly encourage you to complete them!*

Project (20%). Over the course of the semester you will collaborate with fellow students to complete a project with online, hands-on, and presentation components.

Field Trip (5%). We will be taking a class trip to the Brooklyn Bridge to explore some of the connections between mathematics, science, and the real world. You will be asked to do a small write-up.

OpenLab participation (5%). You will be participating in the OpenLab (the course website) by posting and making comments each week. More details will be provided in a separate document.

In-Class Exams (30%). There will be four exams over the course of the semester. Students with good attendance will have the lowest exam grade dropped (see "Attendance" below). No makeup exams will be given - if you are forced to miss an exam with a valid reason, that will count as your dropped exam grade.

Final Exam (20%). The final exam will be given on the last day of class and will cover all topics for the semester. The final exam must be taken to pass the class. The exam is created by the department; sample questions are available as hard-copies in N-711 as well as online.

Websites: There are two websites for the course, OpenLab and MathZone.

OpenLab: The main course website is located on the OpenLab, CityTech's new digital platform. We will be using this site a lot during the semester -- it has all the information about the course, assignments, grading, and so on, and it is the place where we will be making announcements, asking questions, and holding discussions as a group. You will need to register on the OpenLab in order to participate (registration is free, but you will need your citytech email address).
> *Website: openlab.citytech.cuny.edu/groups/mat-1175*

MathZone: Homework for the course will be completed on the MathZone Homework website. You will need to register on the website in order to complete the homework. To obtain a registration code you *SHOULD* purchase a new copy of the Intermediate Algebra textbook (if you have a used copy of the book and the code has already been used, you may purchase a registration code for at mathzone.com for $50: use New York City Tech College (Brooklyn) for school).
> *Website: mathzone.com*
> *Registration code: Included in your new copy of Intermediate Algebra textbook*
> *Section Enrollment Code:*
> *If you are in Section **5147** with Professor Halleck, use code:* **8F6-6B-C33**
>
> *If you are in Section **5148** with Professor Reitz, use code:* **863-9C-3DE**

Attendance. Anything in excess of 10% of the total number of class meetings is considered excessive absence (more than 3 absences). A student who is excessively absent will have all 4 exam grades count towards the class average. Two **latenessess** count as one absence.

Academic Integrity. The New York City College of Technology Policy on Academic Integrity: Students and all others who work with information, ideas, texts, images, music, inventions, and other intellectual property owe their audience and sources accuracy and honesty in using, crediting, and citing sources. As a community of intellectual and professional workers, the College recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and at New York City College of Technology and is punishable by penalties, including failing grades, suspension, and expulsion. The complete text of the College policy on Academic Integrity may be found on p. 64 of the catalog.

By the end of the course, the student will :
1. demonstrate the ability to manipulate algebraic expressions including polynomials, rational and radical expressions.
2. demonstrate the ability to solve equations including linear, quadratic, rational and radical equations, as well as systems of linear equations in two variables.
3. demonstrate the ability to apply theorems and solve problems in geometry including parallel and perpendicular lines, congruent and similar triangles, and special right triangles.
4. identify abstract mathematical relationships between quantities.
5. identify concrete mathematical relationships in other disciplines and outside the classroom.
6. apply algebraic and geometric principles to solve problems in other disciplines and outside the classroom.