M115 – College Algebra for Pre-calculus
Sample Syllabus

Class Number & Meeting Time:

Instructor: **Room:**

Email: **Office Hours:**

Learning Outcomes:

This course satisfies the Mathematical and Quantitative Reasoning (MQR) requirement of the Pathways General Education Required Core with the following learning outcomes:

- **MQR 1:** Interpret and draw appropriate inferences from quantitative representations, such as formulas, graphs, or tables.
- **MQR 2:** Use algebraic, numerical, graphical, or statistical methods to draw accurate conclusions and solve mathematical problems.
- **MQR 3:** Represent quantitative problems expressed in natural language in a suitable mathematical format.
- **MQR 4:** Effectively communicate quantitative analysis or solutions to mathematical problems in written or oral form.
- **MQR 5:** Evaluate solutions to problems for reasonableness using a variety of means, including informed estimation.
- **MQR 6:** Apply mathematical methods to problems in other fields of study.

Textbook:

Intermediate Algebra, 2nd edition by Marecek & Mathis. This textbook is available for free online and as a PDF download. If you prefer a physical copy, you can order one from Amazon. The textbook has helpful practice problems and examples, so I recommend that you use it to supplement what you are learning in class.

Attendance and Participation:

Attending and participating in every class is crucial to success in this course. If you miss a class, you have the responsibility to catch up on covered material, announcements, and quizzes. Over time, absence from classes will impact your grades and financial aid.

During class time, phones should be silenced and stored (NOT on your desks!) and earbuds should be removed. Laptops and tablets are permitted only for the purpose of taking notes. I expect full engagement when you attend, so please don't spend your time surfing the web, listening to music, sleeping, or carrying on conversations unrelated to the class. You should expect to spend 3-4 hours a week completing assignments outside of class.

Homework:

Homework is not optional in this class, and practicing homework problems (on your own, without the help of the internet!) is key to your success in the course. Homework will be completed online using MyOpenMath, a free online homework system. Our Course ID is **XXXXXX**, and the class key is **qcXXXXX**. You can watch this video for instructions on enrolling in the course. Once you are enrolled, you will find the content standards, homework assignments, links to the relevant sections of the textbook, and supplemental videos.

Quizzes and Exams:

The key concepts that you will learn in this class are summarized in a list of 18 standards at the end of the syllabus. Some weeks you will be given a chance to show your progress toward these standards by taking a quiz. Each quiz will take about 10 minutes and will be given at the BEGINNING of class. (Make sure you are on time!) You will also take **two/three** in-class exams and one cumulative final exam. All exams are closed book/notes.

Exam 1	Standards 1 – 6	**Date**
Exam 2	Standards 7 – 15 (or 7 – 12)	**Date**
//Exam 3	**Standards 13 – 18**	**Date//**
Final Exam	All Standards	**Finals Week**

Course Grades:

Your grade will be made up of the following categories:

Homework:	**XX**%
Quizzes:	**XX**%
In-Class Exams:	**XX**%
Final Exam:	**XX%**
Total…………………….......100%	

Grades are computed using the standard scale:

97%, 93% and 90%	*for grades of A+, A, and A-*
87%, 83%, and 80%	*for grades of B+, B, and B-*
77%, 73%, and 70%	*for grades of C+, C, and C-*
67% and 60%	*for grades of D+ and D*
Below 60%	*is an F*

Missed Assignments:

I understand that challenges can come up that can affect your ability to meet deadlines. You have been automatically granted **X** late passes in MyOpenMath that you can apply to extend a homework assignment by 48 hours (here is a video with instructions for applying late passes). If you miss an exam or a quiz, I will need to see documentation of an emergency before granting a makeup. You will receive a zero if you miss an exam or quiz without documentation.

Calculators:

Scientific or graphing calculators are permitted for use in the course, and I recommend bringing one for quizzes and exams. You will not be permitted to use a cell phone as a calculator. If you do not have a calculator and would like to borrow one for exams, they are available in the math office in Kiely Hall 243.

Help Outside of Class:

Learning takes time! You need to make time in your schedule to review your notes, complete homework assignments, and prepare for quizzes and exams. Your first level of support should come from your peers. I encourage you to work together by forming study groups and collaborating on homework. In addition to finding help from your classmates and coming to office hours, you can visit the Math Lab in Kiely Hall 331or the Learning Commons in Kiely Hall 131 for free tutoring.

Academic Honesty:

Your work in this class must be your own! Copying someone else's quiz or exam, using the internet or a cellphone during exams, or communicating with another student during exams are all examples of academic dishonesty. You may form study groups to collaborate on homework and study for assessments, but the work submitted must be your own. The CUNY Policy on Academic Integrity states that academic dishonesty is punishable by penalties including failing grades, suspension, and expulsion. I take cheating very seriously. It is the fastest way to lose my respect for you as a student and to receive a zero on a quiz or exam.

Accommodations for Students with Disabilities:

Students with disabilities needing academic accommodation should register with and provide documentation to the Office of Special Services. The Office of Special Services will provide a letter for you to show your instructor indicating the need for accommodation and the nature of it. This should be done during the first week of class.

Technical Support:

The ITS Help Desk provides technical support for students who need help with Queens College email, CUNY portal, Brightspace, and CUNYFirst. You may submit a ticket online or email support@qc.cuny.edu.

Schedule: (Instructors choose one based on number of exams.)

Schedule for Three Exams			Schedule for Two Exams	
Day	**Standards**		**Day**	**Standards**
1	Introduction		1	Introduction
2	Introduction		2	Introduction
3	Standard 1		3	Standard 1

4	Standard 2		4	Standard 2
5	Standard 3		5	Standard 3
6	Standard 4		6	Standard 4
7	Standard 5		7	Standard 5
8	Standard 6		8	Standard 6
9	Review		9	Review
10	Exam 1		10	Exam 1
11	Standard 7		11	Standard 7
12	Standard 8		12	Standard 8
13	Standard 9		13	Standard 9
14	Standard 10		14	Standard 10
15	Standard 11		15	Standard 11
16	Standard 12		16	Standard 12
17	Standard 12, cont.		17	Standard 12, cont.
18	Review		18	Standard 13
19	Exam 2		19	Standard 14
20	Standard 13		20	Standard 15
21	Standard 14		21	Standard 15, cont.
22	Standard 15		22	Review
23	Standard 16		23	Exam 2
24	Standard 17		24	Standard 16
25	Standard 18		25	Standard 16, cont.
26	Review		26	Standard 17
27	Exam 3		27	Standard 18
28	Review		28	Review

M115 Content Standards

These standards align with the textbook *Intermediate Algebra, 2nd edition* by Marecek & Mathis on OpenStax. Corresponding sections of the textbook are noted in parentheses after each standard.

Unit 1: Linear Equations and Functions

Standard 1: I can identify linear equations and sketch their graphs. I can convert linear equations from the form $Ax + By = C$ to the form $y = mx + b$ and determine the slope and the x- and y-intercepts. I can identify vertical and horizontal lines, write their equations, and sketch their graphs. (3.1, 3.2)

Standard 2: I can find the slope of a line given two points, identify the slopes of vertical and horizontal lines, and use slopes to determine whether two lines are parallel or perpendicular. I can write the equation of a line given two points, one point and the slope, or one point and some characteristic of the slope. I can solve application problems involving linear equations. (3.2, 3.3)

Standard 3: I can identify functions represented in various ways (graphs, sets of ordered pairs, or equations) and state their domain and range. I can interpret the graph of a function and apply the vertical line test to determine whether a graph represents a function. I can interpret function notation and evaluate functions. (3.5, 3.6)

Standard 4: I can identify the number of solutions to a system of two linear equations. I can solve a system of two linear equations by graphing, substitution, and elimination/addition. I can solve application problems involving a system of two linear equations. (4.1, 4.2)

Unit 2: Polynomials

Standard 5: I can write polynomials in descending order and identify the degree of a term and the degree of a polynomial. I can evaluate polynomial functions and add and subtract polynomials. I can apply the properties of exponents to fully simplify expressions, including those with negative exponents. (5.1, 5.2)

Standard 6: I can multiply polynomials and divide polynomials by a monomial or by a binomial, using long division. (5.3, 5.4)

Unit 3: Factoring

Standard 7: I can factor out the greatest common factor from a polynomial, factor by grouping, and factor trinomials with a leading coefficient of 1. (6.1, 6.2)

Standard 8: I can factor trinomials where the leading coefficient is not 1, factor the difference of perfect squares, and factor the sum or difference of perfect cubes. I can apply a variety of techniques to completely factor polynomials. (6.2, 6.3, 6.4)

Standard 9: I can solve polynomial equations by factoring. I can find the zeros of a function and solve application problems involving quadratic equations. (6.5)

Unit 4: Rational Expressions and Equations

Standard 10: I can evaluate rational functions and determine their domains. I can simplify, multiply, and divide rational expressions. (7.1)

Standard 11: I can add and subtract rational expressions. (7.2)

Standard 12: I can simplify complex rational expressions and solve rational equations. I can rearrange a rational equation to solve for a specific variable. (7.3, 7.4)

Unit 5: Radical Expressions and Equations

Standard 13: I can evaluate radical functions and determine their domains. I can simplify radical expressions that are roots of perfect powers and simplify expressions with rational exponents. (8.1, 8.3, 8.7)

Standard 14: I can simplify radical expressions that are not roots of perfect powers. I can add, subtract, and multiply radical expressions. (8.2, 8.4)

Standard 15: I can divide radical expressions, rationalize denominators with one or two terms, and solve radical equations. (8.5, 8.6)

Unit 6: Quadratic Equations and Formulas

Standard 16: I can solve quadratic equations by taking a square root, completing the square, or using the quadratic formula. I can identify the number and type of solutions to a quadratic equation using the discriminant. (9.1, 9.2, 9.3)

Standard 17: I can sketch the graph of a quadratic equation in general form and identify the vertex, axis of symmetry, minimum/maximum point and value, and x- and y-intercepts of a parabola. (9.6)

Standard 18: I can apply the midpoint and distance formulas. I can sketch the graph of a circle and write the equation of a circle in standard form given its center and radius. (11.1)