

U3600-109: Algebra for Calculus

Course Format: Online

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Course credits: 4

Prerequisites: Completion of 2 years of high school Algebra and 1 year of high school Geometry with a C or better or the equivalent. Appropriate for advanced high school students; First-year or higher college students.

Catalog Description: The study of the properties of elementary functions, such as polynomial, absolute, radical, rational, exponential and logarithmic functions. Topics include equations, inequalities, functions, and their graphs. Students will formulate, analyze, solve and interpret mathematical and real-world problems. Student work will be completed in a third-party e-text platform as well as through the online learning management system. A mix of interactive figures, video lectures, examples, and help are available to assist students in the course. Throughout the course, students will have at least three opportunities to have video conversations with the course facilitator. Students will work with the course facilitator to create a customized learning plan to create a path towards course completion. In this problem-based quantitative course, students will have the opportunity to communicate and collaborate with other students in the course. Students are given opportunities to participate in student-to-student tutoring sessions for extra credit. The course is intended to provide the algebra skills for calculus.

Required Course Materials

- The course uses an online adaptive educational environment called MyLabsPlus. To register and gain access to an electronic text book, practice, homework, and quizzes, use the instructions available on the Syllabus page in the course.

Optional/Recommended Course Materials

- Sullivan, M., III. (6th Eds). (2012) *College Algebra Enhanced with Graphical Utilities*. Upper Saddle River, NJ: Pearson Prentice Hall. ISBN-13: 9780321795649
 - While there is an e-text included with the MathLabs subscription, if you prefer a hardcopy of the text you can purchase the book listed here. Please note that this is not required and is simply a supplement to the online materials purchased in the Required Course Materials section.
- Graphical Calculator

Hardware Requirements

You will need a webcam, speakers, and a microphone. You will complete your exams through an online proctor, requiring all three components. You will also need access to a scanner for uploading assignments and exams.

Course Learning Objectives/Learning Outcomes

- Identify and interpret properties of linear, polynomial, piecewise and absolute value, exponential, logarithmic, rational, and radical functions given in analytic or graphical form. Features include, but are not limited to, domain, range, intercepts, real and complex zero, end behavior, and asymptotes.
- Solve equations and inequalities involving elementary functions (polynomial, absolute, radical, rational and radical functions) graphically, analytically and with matrices.

- Analyze, construct, and solve equations and inequalities arriving from applied problems that can be modelled by elementary functions and interpret the results.
- Use functions operations, including compositions and inverses, to create new functions.
- Students will analyze the relationships between the original and the resulting functions using analytic and graphical techniques.

Course Overview

MODULE #	MODULE TOPIC	EVALUATED ACTIVITIES
0	Review	MyLabs Plus Assignments; MyMathLabsPlus Unit Quiz 1
Unit 1	Graphs, Equations and Inequalities	MyLabs Plus Assignments; MyMathLabsPlus Unit Quiz 2
		Written Assignment
Unit 2	Graphs	MyLabs Plus Assignments; MyMathLabsPlus Unit Quiz 3
Unit 3	Functions and their Graphs	MyLabs Assignments; MyMathLabsPlus Unit Quiz 4
		Written Assignment 2
		Term Examination 1
Unit 4	Linear and Quadratic Functions	MyLabs Plus Assignments; MyMathLabsPlus Unit Quiz 5
Unit 5	Polynomial and Rational Functions	MyLabs Plus Assignments; MyMathLabsPlus Unit Quiz 6
		Written Assignment 3
		Term Examination 2
7 Unit 6	Exponential and Logarithmic Functions	MyLabs Plus Assignments; MyMathLabsPlus Unit Quiz 7
		Written Assignment 4
		Term Examination 3*
		Final Examination

Evaluation Methods

Task	Number of Items	Individual Item/Unit Percentage	Total Percentage
MYLabsPlus HW Assignment	6 Units	2.5%	15%
MyLabsPlus Unit Quiz	Best 5 out of 6	3%	15%
Written Assignments	4	5%	20%
Term Examinations	2	10%	20%

(A) Term Exam OR (B) 4 Student-Student Tutoring Session*	1	10%	10%
Final Exam	1	10%	20%

MyMathLabsPlus Homework Assignments (15%)

The MyMathLabsPlus Homework Assignments are completed online in MyMathLab. Students complete assignments on 7 unit modules with access to learning aids such as Ask my instructor, Interactive figures, Video lectures, View an Example, Help me Solve this and other essential tools.

MyMathLabsPlus Unit Quizzes (15%)

The MyMathLabsPlus Unit Quizzes are completed online in MyMathLab. A total of 6 quizzes will be assessed. The top 5 quizzes will be included in the Final grade.

Written Assignments (20%)

Written Assignments are accessed, submitted, and evaluated through the course. Feedback will be provided through written and audio comments. Each written assignment is worth 5%.

Term Examinations (30%)

Two Term Examinations are mandatory. Students can choose to either (A) take the Third Term Examination or (B) participate in 4 student-to-Student Tutoring Sessions. Each Term Examination is worth 10% and if option B is selected, the four tutoring sessions will be worth 10%.

Final Examination (20%)

The Final exam is cumulative. The final exam is a timed and proctored exam. The exams must be completed without the use of books, or any other online reference materials, for example, google or wolfram math. However, the students may use one 3x5 inch note cards for use on the exam. Both sides of each card may be used. The use of a calculator is acceptable as long as it does not have a CAS (calculator algebraic system), like the TI-89, nor a QWERTY keyboard, like the TI-92. The instructor will examine the student's submitted scanned sheets for possible partial credit.

Faculty-Student Hour Meetings: This serves as Proof of Participation. Student and Instructor meet each other on their first appointment and set up a customized course plan according to the student's needs. The Instructor then sets up a date for the next two meetings and sets up a reminder a week before the meeting commences. All 3 meetings serve as proof of participation.

Extra Credit Tutoring Sessions:

Students are encouraged to volunteer tutoring their classmates to earn extra credit. For each tutoring session:

- The recipient receives +0.5% extra credit.
- The tutor receives +1% extra credit for each session.

If you are pursuing option B, please note that you will get +1% from the fifth session onwards. Total extra credit limited to 5% of the total grade. The extra credit is added to your final grade just before it is posted.

Exam Method: Online with Proctoring

This course requires all students to complete Term and Final Examinations online with a proctoring service. Students receive one attempt on each exam.

Grading Scale

The following grading scale is used to evaluate all course requirements and determine your final grade. Grades will always be rounded up to the nearest tenth.

A = 93–100	B = 83–87.9	C = 70–77.9	D = 60–69.9
AB = 88–92.9	BC = 78–82.9		F = Below 60

Pass/Fail Option

Students who enroll in an Independent Learning course under the pass/fail option will receive a final grade of S in place of a final grade equivalent to an A, AB, B, BC, or C and a final grade of U in place of a final grade equivalent to a D or F.