

MCDANIEL COLLEGE BUDAPEST

MAT 1107 College Algebra

INSTRUCTOR: Lángné Lázi Márta

CONTACT INFORMATION:

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AVAILABILITY:

Professor Láng-Lázi is available shortly before and after her classes, as well as by appointment.

COURSE DESCRIPTION:

College Algebra presents basic concepts of algebra in a simple, straightforward way. The course is application oriented. Examples motivate students and reinforce algebraic concepts by the applications of these examples to real world situations that students can identify with. These examples also guide students to organize their work in a logical fashion and use meaningful shortcuts whenever appropriate.

Hence, students will find that this course provides good preparation for study of more advanced algebraic or calculus or statistics ideas.

Participants are expected to be very active in their learning both in the class and at home.

LEARNING OUTCOMES:

After completing the course the students should:

1. Successfully perform algebraic operations.
2. Demonstrate understanding and knowledge of properties of functions, which include domain and range, operations, compositions. Define and give examples of functions.
3. Recognize and apply polynomial, rational, exponential, and logarithmic functions and solve related equations.
4. Apply graphical, symbolic and numeric techniques. Graph linear, quadratic, absolute value, power, exponential and logarithmic functions, and apply graphing transformations.
5. Recognize, solve and apply systems of linear equations.
6. Set up and solve word problems involving linear, quadratic, rational, radical, exponential and logarithmic expressions, or systems of linear equations in two or three variables.

HONOR CODE:

Students are expected without question to adhere completely to the McDaniel College academic honor code. Any violation will result in a zero for the given assignment and other possible sanctions.

COURSE POLICIES:

The in-class participation determines part of the grade. Participation implies attendance; absences will be noted and will adversely affect the final participation grade. In addition, in accordance with

McDaniel Budapest's attendance policy, there will be an automatic deduction of one letter grade for every unexcused absence following the third unexcused absence.

I ask that the students don't be late.

ASSIGNMENTS & GRADING

Grading system -- 100 points total

- mid-term exam worth 20 points
- final exam worth 60 points
- class participation 10 points
- home work worth 10 points

Standard scale:	100	A+
	93-99	A
	90-92	A-
	88-89	B+
	83-87	B
	80-82	B-
	78-79	C+
	73-78	C
	70-72	C-
	68-69	D+
	63-67	D
	60-62	D-
	< 60	F

TOPICS COVERED

Basic concepts and Properties. Sets, real numbers and numerical expressions. Operations with real numbers, properties of real numbers. Algebraic expressions. Use of exponents. Equations, Inequalities and Problem solving: first-degree equations. Proportionality, direct and inverse variation. Concept of percentage.

I. *Some Basic Concepts of Algebra*

1. Sets, sets operations.
2. Real numbers, and numerical expressions.
3. Operations and conventions
4. Some basic ideas, least common denominator, greatest common divisor
5. Exponents
6. Polynomials
7. Factoring polynomials
8. Rational expressions
9. Radicals
10. Relationships between exponents and roots

II. *Equations, inequalities, and problem solving*

1. Linear equations and problem solving (rate-time problems, mixing problem, proportionality)
2. More equations and applications
3. Quadratic equations
4. Applications of linear and quadratic equations
5. Inequalities

6. Inequalities involving quotients and absolute value
7. System of linear equations.

III. *Functions*

1. Concept of a function, inverse function and compositions of functions.
2. Linear and quadratic functions Determining the equation of a line
3. Quadratic functions and problem solving
4. Absolute value function
5. Exponential equations and logarithmic equations and, problem solving

IV. *Graphing techniques*

1. Graphing techniques: Linear equations and inequalaties
2. Exponential functions, logarithmic functions.
3. Absolute value functions.
4. Transformations of some basic curves

Textbook:

Jerome E. Kaufmann: College Algebra

COURSE REQUIREMENTS:

During the semester students are obliged to attend lectures regularly and study continuously. During the semester students will get homeworks and will write one midterm test.