



University at Buffalo The State University of New York

Thomas J. Edwards Learning Center
ULC 147 – Intermediate Algebra – 4cr – SPRING 2022

Instructor: _____

Office: **217A** or **217B** Baldy Hall- North Campus

Email: _____

Office Hours: _____

Mode of Instruction: In Person

Class Time(s) and Location(s)

ULC 147- _____ (Reg. _____) Day of the Week: _____ Time: _____ Location: _____

Pre-Requisite: None

Credit: ULC 147 prepares students for ULC 148 which satisfies the Mathematical Skills requirement of the General Education Program. ULC 147 does NOT satisfy the Mathematical Skills requirement for the General Education Program. ***If you have taken a more advanced math course for credit (e.g. ULC 148, MTH 121, MTH 141, or MTH 115), you are not eligible to take this course.***

Course Description

This course explores operations on the real numbers, problem solving, operations on polynomial and rational expressions, equations with rational exponents, solving systems of linear equations and inequalities in one or two variables, and factoring. ULC 147 also introduces quadratic equations.

Core Learning Outcomes

Upon completion of this course, students will be able to master the algebraic concepts necessary for success in future mathematics courses while building confidence in their mathematical abilities. By the end of this course students should be able to:

- Use the basic rules of algebra to simplify various types of expressions and factor polynomials
- Convert between radical and exponential form, and between standard and scientific notation
- Graph lines, circles, and quadratics
- Combine multiple functions to form a new function
- Find inverses of functions
- Find the distance and midpoint between two points
- Use transformation to graph functions, specifically quadratics
- Apply their knowledge of functions in modeling and applications in two variables
- Solve various types of equations including linear and absolute value, and systems of equations
- Graph polynomial and rational functions
- Find roots of polynomials using various techniques including dividing by a factor

Students will be assessed through classwork, homework, quizzes, and exams.

Course Materials

MyMathLab: **MANDATORY** online access code that includes the electronic version of the textbook (e-text)

Textbook: (optional hard copy version) Algebra and Trigonometry, **5th UB Custom Edition**, Robert Blitzer (2017).
Additional resources can be found on UBLeads.

Calculators will NOT be allowed on quizzes, exams, nor the final. While calculators may be used on homework assignments, their use is discouraged.

Technology: To effectively participate in this course, regardless of mode of instruction, the University recommends you have access to a Windows or Mac computer with webcam and broadband. Your best opportunity for success in the blended UB course delivery environment (in-person, hybrid, and remote) will require these minimum capabilities listed on the following website: <http://www.buffalo.edu/ubit/service-guides/hardware/getting-started-with-hardware/purchasing-or-using-an-existing-computer.html>

Course Requirements

Assignments: (See Assignments on UBLearns or MyMathLab for details and dates)

Attendance: Attendance in all classes is required and will be taken every day. Students may be justifiably absent from classes due to religious observances, illness documented by a physician or other appropriate health care professional, conflicts with university-sanctioned activities documented by an appropriate university administrator, public emergencies, and documented personal or family emergencies. The student is responsible for notifying the instructor in writing with as much advance notice as possible. Instructors may determine a reasonable amount of coursework that should be completed in order to make up the student's absence. Students are responsible for the prompt completion of any alternative assignments.

Grading Policy: Your final grade will be broken down as follows:

45% Three in-class Examinations
20% Cumulative Final Exam
15% Quizzes
15% Homework
5% Attendance/Participation

Final course grades will be determined by the following breakdown:

A	93.0-100.0	B+	87.0-89.9	C+	77.0-79.9	D+	67.0-69.9
A-	90.0-92.9	B	83.0-86.9	C	73.0-76.9	D	60.0-66.9
		B-	80.0-82.9	C-	70.0-72.9	F	0-59.9

Examination: There will be three one-hour, in-class exams and a three-hour comprehensive final exam during finals week. The material that will be tested on the exams will be taken from the text, class notes, homework problems and class handouts. Review sheets may also be provided as a study guide; however, it will be necessary to study homework, class notes, and quizzes in preparation for all exams. In addition, optional outside-of-class review sessions may be held for review of material. A grade of zero (0) will be assigned for any examination missed unless suitable documentation is provided to the instructor within 24 hours of the exam being given. **The final exam is mandatory. If the final exam is not taken, you will receive an F in the class.**

As a supplement to exams, a minimum of 6 quizzes will be graded throughout the semester. A grade of zero (0) will be assigned for any quizzes missed and no make-up quizzes will be given. All dates will be announced in class and posted on UBLearns.

Homework: Assignments will be given on a regular basis. You will probably need to spend around 6 hours per week doing homework and reading assignments. Intensive studying just before an exam (cramming) will not compensate for daily preparation. If you are unable to devote at least 6 hours per week outside of class, you are advised not to take the course. Unless otherwise noted by your instructor, you are encouraged to work with others as frequently as possible on material for this class.

Incomplete Grades: A grade of incomplete means that an event has occurred that is preventing the student from completing the coursework needed to earn a grade. There are two conditions for receiving an incomplete. First, there must be some extreme circumstance that justifies the "I" grade, and second, **the student must be passing the course.** It should be understood that if a student meets these two conditions, they will only be allowed to finish the coursework that they were unable to complete. An "I" grade does not erase grades on exams, quizzes, homework, etc. that were completed before the "I" grade is issued. Students have only one semester to complete the course. Final arrangements must be made with the Department's Director.

Participation: You will be expected to participate in class. Learning is an active, not passive endeavor. Group work may also be used extensively throughout the course, so you will be expected to interact with your fellow classmates. Evaluation of the student in this category will be left up to the individual instructors' discretion.

CELL PHONES: Use of cell phones and text messaging are strictly prohibited in class.

Academic Integrity

As defined in the Undergraduate Catalog, academic dishonesty consists of cheating, fabrication, facilitating academic dishonesty, and plagiarism. Instances of this include submitting someone else's work as your own, submitting your own work completed for another class without permission, using resources which are not permitted for an assignment, quiz, or exam, or

failing to properly cite information other than your own. The list above is not all inclusive. Any form of academic dishonesty will not be tolerated, and any sign of academic dishonesty will be reported to the appropriate University officials.

The University has a responsibility to promote academic integrity and develop procedures to effectively deal with academic dishonesty. The ULC department is pursuing the fullest penalties for academic dishonesty. This means that **as a default, the penalty pursued for academic dishonesty will be failure of the course.** Any instances of academic integrity will be processed through the Office of Academic Integrity, and may result in **a notation of academic dishonesty on the student's transcript.** Any form of academic dishonesty will be handled in accordance with the UB Undergraduate Policy regarding academic integrity. The Academic Integrity policy can be viewed here: <https://catalog.buffalo.edu/policies/integrity.html>

Reasonable Accommodation

If you have a disability and may require some type of instructional and/or examination accommodation, please inform Instructor early in the semester so that we can coordinate the accommodations you may need. If you have not already done so, please contact the Accessibility Resources office. The office is located at 60 Capen Hall and the telephone number is (716) 645-2608.

<https://www.buffalo.edu/administrative-services/policy1/ub-policy-lib/reasonable-accommodation.html>

The MATH PLACE: Beginning the second week of classes, **FREE** tutoring is available in the Math Place which will be operating in person, in **Baldy 211** during the Spring 2022 semester, Mondays-Thursdays from 10am-6pm. Additionally The Math Place will offer virtual hours via Discord on Sundays, 2pm-8pm. Experienced tutors as well as instructors will be available to assist students with any material related to the ULC classes. All students are encouraged to take advantage of this valuable **FREE** resource. More information can be found on the web site: <http://arts-sciences.buffalo.edu/ulc.html>.

Any student maintaining a grade below a “C” in the course is expected to visit the Math Place at least 2 hours per week.

Additional Resources

Additional free tutoring resources can be found at the Tutoring and Academic Support website:
<https://www.buffalo.edu/studentsuccess/tutoring.html>

We highly recommend that students visit the Academic Resources and Updates for Students page on the Academic Affairs website, found here: <https://www.buffalo.edu/academicaffairs/academic-resources.html>
The Student Success Gateway website has a wealth of information and resources which students will find valuable:
<https://www.buffalo.edu/studentsuccess.html>

Important Dates: Spring 2022 Semester

Monday, January 31, 2022	Classes Begin
Monday, February 7, 2022	Last Day to Drop/Add Classes
Friday, April 22, 2022	Last day to Resign Classes
Monday, March 21 – Saturday, March 26, 2022	Spring Recess
Friday, May 13, 2022	Last Day of Classes
Friday, May 16, 2022, 8:00am-11:00am in O’Brian 112	Cumulative Final Exam

COURSE OUTLINE:

**** Approximate timing for the topics below will be announced in UBLearnS ****

Chapter PP: Fractions

Chapter P: Fundamental Concepts of Algebra

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| P.1 –Algebraic Expressions, Models, and Real Numbers | P.5 –Polynomials |
| P.2 –Basic Rules of Algebra | P.6 –Factoring Polynomials |
| P.3 –Exponents and Scientific Notation | P.7 –Rational Expressions |
| P.4 –Radicals and Rational Exponents | |

Chapter 1: Functions and Graphs

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| 1.1–Graphs and Graphing Utilities | 1.6 –Transformations of Functions |
| 1.2–Basics of Functions and Their Graphs | 1.7 –Combinations of Functions; Composite Functions |
| 1.3–More on Functions and Their Graphs | 1.8 –Inverse Functions |
| 1.4–Linear Functions and Slope | 1.9 –Distance and Midpoint Formula; Circles* |
| 1.5–More on Slope | |

Chapter 2: Equations and Inequalities

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| 2.1 –Linear Equations and Rational Equations | 2.6 –Linear and Absolute Value Inequalities |
| 2.2 –Models and Applications | 2.7–Systems of Linear Equations in Two Variables |
| 2.3 –Complex Numbers | (Section 8.1 in the Student Solutions Manual) |
| 2.4 –Quadratic Equations | |
| 2.5 –Other Types of Equations | |

Chapter 3: Polynomial and Rational Functions*

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| 3.1 –Quadratic Functions* | 3.5 –Rational Functions and Their Graphs* |
| 3.2 –Polynomial Functions and Their Graphs* | 3.6 –Polynomial and Rational Inequalities* |
| 3.3 –Dividing Polynomials: Remainder and Factor Theorems* | 3.7 –Modeling Using Variation* |
| 3.4 –Zeros of Polynomial Function* | |

*These topics/chapters will be included at the discretions of the instructor