University at Buffalo The State University of New York

Thomas J. Edwards Learning Center

ULC 147 – Intermediate Algebra – 4cr – **FALL 2017**

Instructor: _____ Office: **213 / 215** Baldy Hall – North Campus

Email: _____ Office Hours: _____

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.
If you have taken a more advanced math course for credit (e.g. ULC 148, MTH 121, 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 UBLearns.

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 in one of the following ways.

Option A		Option B
70%	Three in-class Examinations	40%
30%	Homework, Quizzes, Miscellaneous	30%
N/A	Cumulative Final Exam	30%

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

Plus/Minus grades will be based on final grade average, class participation, overall effort and performance.

NOTE: Quizzes, homework, and the "other" portions comprise 30% of your final grade. It would not be beneficial to neglect these assessments as they may make or break the grade you receive in this class.

Examination: There will be three one-hour, in-class exams and a three-hour *optional* 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 one class day*** of the exam.

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.
If you receive an emergency call, please step into the hallway to answer the call and return to class ASAP.

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, 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. 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

Any form of plagiarism will result in a grade of "F" for that assignment. Any second form of plagiarism will result in a grade of "F" in the course.

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://policy.business.buffalo.edu/Policy%20Library/Reasonable%20Accommodation.pdf

The MATH PLACE: Beginning the **second** week of classes, **FREE** tutoring is available in the Math Place **located in Baldy Hall, Room 211**. Hours of operation will be posted on the web site: http://tlc.buffalo.edu/ . 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.

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

Important Dates: FALL 2017 Semester

Monday, August 28	**Fall 2017 *classes begin***
Monday, September 4	**No Class – Labor Day**
TUESDAY, September 5	**LAST DAY TO DROP/ADD COURSES**
Wednesday, November 22 to Saturday, November 25	**FALL RECESS**
Monday, November 27	**Classes Resume**
FRIDAY, November 10	**LAST DAY TO RESIGN WITH "R" GRADE**
Friday, December 8	**Last Day of Classes**
Saturday, December 9 and Sunday, December 10	**Reading Days**
Monday, Dec 11 *through* Monday Dec 18	**SEMESTER FINAL EXAMINATIONS**

COURSE OUTLINE:

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

Chapter PP: Fractions (Solutions on UBLearns)

Chapter P: Fundamental Concepts of Algebra

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

Chapter 1: Functions and Graphs

1.1 – Graphs and Graphing Utilities
1.2 – Basics of Functions and Their Graphs
1.3 – More on Functions and Their Graphs
1.4 – Linear Functions and Slope
1.5 – More on slope
1.6 – Transformations of Functions
1.7 – Combinations of Functions; Composite Functions
1.8 – Inverse Functions
1.9 – Distance and Midpoint Formula; Circles (at Instructor's Discretion)

Chapter 2: Equations and Inequalities

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

Chapter 3: Polynomial and Rational Functions

3.1 – Quadratic Functions
3.2 – Polynomial Functions and Their Graphs
3.3 – Dividing Polynomials: Remainder and Factor Theorems
3.4 – Zeros of Polynomial Functions
3.5 – Rational Functions and Their Graphs
3.6 – Polynomial and Rational Inequalities
3.7 – Modeling Using Variation (Instructor's Discretion)