MATH 1010-071
INTERMEDIATE ALGEBRA
FALL 1017 SYLLABUS

INSTRUCTOR:	John Nordstrom, Associate Instructor, Continuing Education & Community Engagement.
TEXT:	Math 1010 Course Packet, available for download from Canvas or for purchase at Fed-Ex (corner of 200 South and University Street).
TIME & PLACE:	T/Th 8:35 AM – 10:30 AM, Room 107, Sandy Campus 10011 Centennial Parkway, Suite 100, Sandy, UT 84070, 801-587-2520
CONTACT INFORMATION:	Being adjunct faculty, I don't have a University office; not having an office, I don't have office hours. I generally try to be available both before and after class to answer any questions you have. I can also be reached by either of following methods (email is preferred):

Phone:	801-918-3974	(between 9:00 AM and 9:00 PM)
Email:	**nordstro@math.utah.edu**	(anytime) *Note the missing 'm'!*
Website:	Canvas	

PREREQUISITES:	"C" or better in MATH 990 OR Accuplacer EA score of 54 or better OR ACT Math score of 18 or better OR SAT Math score of 470 or better. A scientific calculator is recommended for this course. Scientific calculators are available for around $10 that will suffice for this course. Note that graphing calculators and cell phones are <u>not</u> allowed on the exams.
COURSE DESCRIPTION:	Mathematics is a sense making activity to understand the world we live in. Scientists, social scientists, engineers, business leaders, health care providers, and politicians require a high degree of quantitative literacy to accomplish their goals. In this course, students will become adept at working with linear, exponential, basic logarithmic, quadratic, square root, and power functions, and see how these functions can be used to describe and analyze some of the most difficult problems our society faces. Along the way, functions are used to motivate important topics including evaluating expressions, solving equations and inequalities, graphing, and analyzing graphs.
COURSE OBJECTIVES:	Math 1010 is the prerequisite for either Math 1030 or Math 1050. By the end of this course you should be able to:

Work with Functions

- Work with functions presented in tables, graphs, with algebraic expression, or in words. Determine if relations presented in any of these formats are functions. The functions covered in this course are linear, exponential, logarithmic, quadratic, square root, and power.
- Find the domain, *x*-intercepts, *y*-intercepts, output given the input, and input given the output for all functions presented with tables, graphs, or algebra. Find the range of functions presented graphically.
- Decide if a given function is linear, quadratic, exponential, or none of the above for functions presented algebraically, graphically, or in tables.

- Know the shapes of the graphs of all the above functions. Be able to recognize when a sufficient portion of the graph is sketched in order to indicate the graph shape.
- Determine the slope of a line; find the equations of lines given information about them. Decide if lines are parallel, perpendicular, or neither.

Graph Functions

- Graph linear functions using either two points or one point and a slope.
- Graph quadratic functions either by finding the x-intercepts and the vertex (or line of symmetry) or by using the vertex and an efficient table (be able to use symmetry and possibly the y-intercept).
- Graph logarithmic functions with no transformations by switching the x- and y-values of the corresponding exponential graph.
- Graph exponential and square root functions, when given in transformation form, using efficient tables.
- Graph power functions with no transformations using tables.

Solve Equations, Inequalities, and Systems of Equations

- Solve linear, quadratic, exponential, logarithmic and square root equations.
- Solve quadratic equations using the zero-product property, completing the square, and the quadratic formula.
- Solve linear inequalities and give answers in inequality, interval, and graphical (number line) format.
- Solve 2×2 systems of linear equations and functions using graphical and substitution methods.

Composition and Inverse of Functions

- Perform composition of functions presented with tables, graphs, or algebra.
- Decide if a function presented with a table or graph is invertible and give the inverse in the same format.
- Find the algebraic inverse of a linear function presented algebraically.

Exponential Functions

- Make sense of exponent rules, negative exponents, and rational exponents. Use exponent rules to simplify exponential expression

Construct Algebraic Models to Describe Real Life Situations

- Use linear functions to model constant rates of growth.
- Use exponential functions to model constant percent change.
- Use quadratic functions to model constant acceleration.
- Analyze and use linear, exponential, and quadratic models to answer questions about the situations they represent. In particular, relate graphical features (like the x- and y-intercepts and the vertex or a parabola) to specific aspects of the situation being modeled. For quadratics, be able to rewrite the function appropriately in order to find the information desired.

CLASS STRUCTURE:

The class schedule lists Math 1010 as being a lecture course, and that is true as far as it goes. But like any mathematics course this course will require your active participation to be effective. You will have to do much of the heavy lifting yourself, both in and out of class.

The course packet contains questions that will motivate the content for this course. You can expect to:
- work with your partner(s) on the problems in class;
- have whole class discussions and lectures on pertinent material;
- respond either individually or as a group to daily questions;

- engage in problem solving sessions.

These activities are organized for your benefit. Work in class is meant to train you to become better problem solvers, inform you how well you are understanding the material, and to inform me what we need to focus on. You are required to be in class, and engage actively to maximize the benefits of class work. If you prefer to work in your own time, we recommend taking an online class that allows this flexibility.

We will spend the first part of every class going over questions from the homework; if you haven't done the homework you won't be able to ask questions about it. Please don't be afraid to ask questions, either in or out of class. If there is something you do not understand, you can be assured there are other students who are also lost and will appreciate your question. Please have your questions ready by the start of class.

We will usually spend between 30 and 60 minutes each week either working in groups on longer problem sets, referred to as *labs*, that will be turned in for credit. Some of the labs may be long enough that we will start them in class and you will be expected to finish them before the next the class.

Almost every day we will have a selection of questions, based on the course packet, that you will be expected to do and turn in at the end of the class period. These questions are designed not only to keep you engaged in the material, but to encourage questions and discussion.

Most weeks we will have fairly short quizzes that are based on the course packet. These are slightly more formal than the daily questions, but considerably shorter than the three midterms we will take.

HOMEWORK: This is a four credit-hour course. A rule of thumb is that you should spend between two and three times the number of credit hours of a course *outside* of class every week studying the material. I expect you will spend up to 12 hours each week working the homework, especially if the subject doesn't come easily to you. You are expected to do the assigned homework, not for any points you might earn, but because:

You *learn* math by *doing* math.

Working through problems and getting feedback on whether your process and calculations are correct is an important part of understanding material. WeBWorK is an online homework website that gives you instant feedback on your work, and allows you as many tries as you need to complete the problems. We will also answer question you have about the homework in class. There will be one to three assignments every week. An invitation to WeBWorK will be sent to your CIS email address on the first day of class or within two business days if you add the class after that. Make sure to check your CIS email regularly or have it forwarded.

APPROXIMATE GRADING:

Daily & Weekly Quizzes	10 %
WeBWorK	10 %
Labs	10 %
Midterm Exams	40 %
Final	30 %

Please note that this is the *approximate* weight given to each of the components you will be graded on. There is the likelihood that these weights may be slightly adjusted. As an incentive, I typically give more weight to your final if you do particularly well on it. However, I also reserve the right to give more weight to your final if you do very poorly on it.

My grading scale is the typical standard one:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
>93%	90-93%	87-90%	83-87%	80-83%	77-80%	73-77%	70-73%	67-70%	63-67%	60-63%	<60%

Note that circumstances may dictate that we deviate from either the planned number of quizzes and tests, or the grading and scoring guidelines as described. Any changes will be announced and discussed in class.

GETTING HELP: You may find that you need some extra help beyond what the class can provide. There are several tutoring services available. The math department has a free drop-in tutoring center located in the T. Benny Rushing Mathematics Center. Information about the center can be found at www.math.utah.edu/ugrad/tutoring.html. For more personalized attention, the ASUU Tutoring Center (tutoringcenter.utah.edu/) provides both individual and group tutoring at reasonable rates.

RESPONSIBILITIES: All students are expected to maintain adult and professional behavior in the classroom. Please respect your classmates by not engaging in idle chatter, using your cell phone, or otherwise creating distractions. I request that you avoid eating or chewing gum in class. Most importantly, students are prohibited by the Student Code from cheating, as well as committing acts of fraud, vandalism, or theft.

Part of my responsibilities is maintaining a classroom conductive to learning and enforcing responsible classroom behavior. If I have to, I will take disciplinary actions, beginning with verbal warnings and ultimately progressing to dismissal from this class and a failing grade. Students have the right to appeal such action to the Student Behavior Committee.

AMERICANS WITH DISABILITY ACT: The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations.

All written information in the course can be made available in alternative format with prior notification to the Center for Disability Services.

DISCLAIMER: This syllabus is meant to serve as a guide for our course. Please note that I may modify it with reasonable notice to you. Any changes will be announced in class and posted on Canvas under Announcements.

IMPORTANT DATES

Be sure to consult the official Academic Calendar for other important dates and to make sure there are no changes from these dates.

First class .... Tuesday, August 22
Last day to add without permission .... Friday, August 25
Last day to add/drop class .... Friday, September 1
Fall Break (no class) .... October 9 – 13
Last day to audit/withdraw .... Friday, October 20
Thanksgiving Break (no class) .... November 23 – 24
Last class .... Thursday, December 7

SCHEDULE OF EXAMS

Note that the dates and content of the various exams might change; if this is the case, the class will be notified in a timely manner.

Exam 1 .... Thursday, September 14
Exam 2 .... Thursday, October 19
Exam 3 .... Thursday, November 16
Final (comprehensive) .... Tuesday, December 12
                                                                                                                    (from 8:30 – 10:30 AM)