

# MATH 001: Introductory Algebra

Spring Semester 2009

<b>Section:</b>	<b>Room:</b>	<b>Times:</b>	<b>Final Exam:</b>
001	MRC 316	MWRF 10:00 – 10:50 am	Thursday, 5/7, 9:50 – 11:50 a.m.
003	MRC 316	MWF 2:10 – 3:00 p.m., R 2:00 – 2:50 p.m.	Thursday, 5/7, 7:40 – 9:40 a.m.
<b>Instructor:</b> Elizabeth Gaedy (Math Specialist – Learning Center)			
<b>Contact Information:</b> Office: MRC 332, Phone: 796-3192, Email: emgaedy@viterbo.edu, Office Hours: By Appointment			

**Course Description:** Real number system, order of operations; Algebraic problem solving, solving linear equations; Cartesian coordinate system, graphs of equations; Exponents and radicals; Factoring polynomials, solving equations by factoring.

Four Credits. (Credits not applicable toward graduation.)

**Note:** This course serves as a pre-requisite for MATH 110 (College Algebra), MATH 130 (Introductory Statistics), or MATH 155 (Mathematics, A Way of Thinking). You must earn at least a “C” grade to qualify for the next course in your sequence.

**ALEKS Student Access Code:** Purchased online using a credit card: Go to <http://catalogs.mhhe.com/aleks/index.do> and choose ALEKS Math (One Semester) \$63.

*There is no required textbook.*

## Course Goals and Student Outcomes:

1. Students will demonstrate their readiness for learning algebra.
  - (a) Students will take ALEKS assessment.
  - (b) Students will work through pre-algebra ALEKS modules indicated as necessary.
2. Students will improve their mastery of algebraic skills.
  - (a) Students will take ALEKS assessment of algebra knowledge and skills.
  - (b) Students will work through the ALEKS modules indicated as necessary.
  - (c) Students will take indicated exams to demonstrate their learning.
3. Students will develop their ability to apply algebraic thinking and procedures to problem solving.
  - (a) Students will work through the ALEKS modules that focus on problem solving.

## Course Procedures and Policies:

**MATH 001:** Math 001, “Introductory Algebra”, is a not-for-graduation-credit course intended to prepare students for the various courses for which 001 is a pre-requisite, namely MATH 110 (College Algebra), MATH 130 (Introductory Statistics), and MATH 155 (Mathematics, A Way of Thinking). This course should be a refresher course for you, as the material would have been covered in high school Algebra 1 and Algebra 2 classes, which explains why this course is numbered 001, and why the 4 credits you will earn here do not count toward graduation, even though they do count toward full-time status. If you did not complete Algebra 1 or Algebra 2 in high school, you will find this class more challenging. Each student should be prepared to commit at least 8 hours each week working on the ALEKS program, four of those hours coming from work in the classroom.

Your placement score indicated that you have not mastered this content, whatever the reason. To make the best of the situation, your goal here must be to learn this material and master the necessary skills so that you can be successful in the courses you eventually need to take as part of your college program.

**ALEKS:** ALEKS (Assessment and LEarning in Knowledge Spaces) is a web-based program designed to carefully assess what students know and what they are ready to learn, and then to methodically tutor them in the given material, in this case Introductory Algebra. After registering, you will begin by going through a brief tutorial on the use of the ALEKS input tool, also called the “Answer Editor.” Then the program will have you take the Initial Assessment.

Probably the best thing about ALEKS is that it allows each student to take a course specifically designed for his/her individual needs – students will be working at their own pace\* and working on material they are ready to learn. The implication of this is that I will not be lecturing on topics in the customary way. My role as instructor here is to monitor your learning and to engage in individual tutoring as the need arises. \*You may find you need to put in more time than other students to keep up with the intermediate objectives.

Another advantage to using ALEKS is that since it is web-based you can work on your course anywhere you have internet access. ALEKS will remember where you left off and will always make sure that you have shown readiness before presenting new material. Exception to this rule: All Quizzes and the Completion Assessment must be taken during class.

**Be sure to do your own work!** Your best preparation for quizzes and assessments is when you have been working with ALEKS yourself. By allowing someone else to do your work for you, the only person you are cheating is yourself.

**Grading System:** Your grade will be determined by the following six factors:

- 29% (1) **ALEKS Quizzes:** 180 points possible (9 quizzes x 20 points each)
- 16% (2) **ALEKS modules completed:** 100 points possible (percentage of modules completed based on final assessment)
- 33% (3) **Mid-term and final:** 200 points possible (100 for mid-term, 100 for final)
- 12% (4) **ALEKS Hours:** 75 points possible (15 weeks x 5 points each)
- 10% (5) **Study Skills Assignments:** 60 points possible (6 assignments x 10 points each)
- +/- (6) **Attendance:** Mandatory - Important determination for borderline grades

This makes for a total of 615 points. Grades will be assigned according to the scale:

A	93% or above	
AB	88 – 92%	
B	82 – 87%	
BC	77 – 81%	
C	70 – 76%	<b>**NOTE**</b> You need at least a “C” grade to be allowed to advance to the next course in your sequence.
CD	65 – 69%	
D	60 – 64%	
F	< 60%	

**(1) ALEKS Quizzes:** Throughout the semester, essentially each week, you will be taking quizzes online covering the topics within each chapter. Each Quiz will be worth 20 points, and **must be taken in class, with the instructor present**. You can take the quizzes as soon as you complete a chapter, however, there will be a due date at which point you *must* have the quiz completed whether or not you have finished the material on ALEKS. To help you preview the topics which may appear on each quiz, I have created *Chapter Practice* quizzes which can be found with the Quizzes. These *Chapter Practice* quizzes can be worked on outside of class, and you are not limited to the number of times you can take it. You can review your results for each Practice quiz, and can take the Practice quizzes over and over.

When you are ready to take the Chapter Quiz, or when the deadline date has approached, the Quiz is taken during class time. **There will not be any retakes**, so to preview the topics which may appear on the Quiz, look at the Chapter Practice Problems. As you take your quiz, **create an answer sheet which neatly shows your work and answers for each problem**. That answer sheet must be turned-in upon completion of your Quiz. This allows you to receive partial credit where appropriate.

***You CANNOT use any notes or other individuals for assistance during the Quizzes.***

**\*\*NOTE:** You do not make progress in your PIE when you work on quizzes or practice quizzes. You only make progress when you work on the program by choosing topics from your PIE.

**A calculator is allowed for all in-class assessments EXCEPT for Quiz #1.**

**The quiz deadline dates are found on the Course Calendar, located on Blackboard under “Course Documents”.**

**(2) ALEKS Modules Completed:** On the last two days of class you will take a final assessment, triggered by me. The percentage you score on that assessment is the number of points you receive, based out of 100\*. This assessment must be completed in the classroom. If you do not finish in one class period, you MUST NOT log on to ALEKS again until you return the next day for class, at which time you can complete your assessment. You must leave record with me as to which problem you were on when you leave, and if you are not on that same problem when you return, you must take the assessment again in the Learning Center. ***The use of notes is NOT allowed during the assessment.***

The Completion Assessment will be cumulative, meaning that it will cover all of the topics in the course, not just the ones you have currently been working on. This is different from the automatic assessments generated by ALEKS throughout the semester – those assessments cover material you have recently learned or may be ready to learn. ***\*Due to the different nature of the assessment, you are guaranteed a grade no less than your blue-line value prior to taking the Completion Assessment (assuming no drastic advancement has taken place). However, you may score better than your last assessment, so the higher of the two scores will be recorded.***

**(3) Midterm and Final:** The Mid-Term and Final will be a traditional hard-copy test. It will not be an online assessment. Some of you may not be on schedule for the assessments, and this will no doubt affect your performance and, in turn, your Mid-Term and final course grade. The lesson learned here is that part of success in a course is learning the material within a designated amount of time. ***The use of notes is NOT allowed during the midterm or final.***

**(4) ALEKS Time:** In order for you to make progress through the program, you need to spend additional time working on ALEKS outside of class time. Your goal should be to spend at least 8 hours each week on ALEKS. To help you achieve that goal, your time on ALEKS will contribute to your grade. If you miss class during the week, you are still responsible for the full 8 hours. The "Week" will begin on Mondays. Each week your hourly totals will begin at zero (the time clock on ALEKS does not reset- - you need to keep track on your own), and can be accumulated until 8 a.m. the following Monday. You will not be penalized for any deficits from the previous week, nor will you be able to carry over any excess hours.

The points will be awarded as follows:

5 points - 8 or more hours

4 points - 6 - 7.9 hours

3 points - 4 - 5.9 hours

2 points - 3 - 3.9 hours

1 point - 2 - 2.9 hours

0 points - fewer than 2 hours

**(5) Study Skills Assignments:** Did you know that poor performance in math is rarely due to lack of intelligence? The key to success is having the right approach to studying and learning. You will need to complete 6 assignments which will help you discover areas that are holding you back, and receive suggestions and activities to help you improve your approach to studying math. **Descriptions of the assignments along with a grading rubric are available on Blackboard under "Assignments."** **The due dates for each assignment are found on the Course Calendar, located on Blackboard under "Course Documents."** Assignments can be submitted by email, online *via* Blackboard's Digital Dropbox, or brought to class. You can complete the assignments at least one day early and receive 1 extra credit point for each early assignment. Assignments are due at the start of class. No late work will be accepted.

**(6) Attendance:** A major factor in learning mathematics is a regular and focused schedule of practice. You need to practice virtually every day, and for a considerable amount of time each day in order to establish a solid foundation in algebra. To help you work on ALEKS, classroom attendance is REQUIRED every day. I will be keeping track, and will contact you if you miss too many classes. Your attendance will become a factor if your grade falls on a border between two grading categories.

**If you miss class on the day of a test or quiz, you must notify me immediately. Failure to contact me in a timely manner regarding your absence will result in you forfeiting your right to make-up the exam. If you know ahead of time you will be gone the day of a quiz or test, we can arrange to have you take it at another time.**

**Schedule:** Your starting point and rate of progress are based on your initial assessment and learning rate. Because ALEKS allows students to work at their individual pace, students will be at a variety of places in the material throughout the semester. Still, in order to pass the course and move into the subsequent course you will need to demonstrate sufficient knowledge of the material within the semester's time constraints.

It is possible that some of you will actually complete the ALEKS course before the calendar indicates the semester is over, and that's fine. I will still have you take the final exam with the rest of the class on the scheduled date. And it is possible that some of you may reach May without completing the material. ALEKS offers a guarantee that if you do not pass the course despite having put in at least 80 hours, your license to use ALEKS can be renewed for a semester at no cost. In this case, you will be given a grade of "I" (Incomplete), allowing you to work towards completion of the course during the next semester. Of course, this is far from ideal since it means you could not yet enroll in the course you need to take for your major. Use the Quiz dates as a goal for completion!

**Americans with Disabilities Act:** If you are a person with a disability and require any auxiliary aids, services, or other accommodations for this class, please see me and/or Jane Eddy, the campus ADA coordinator (MC 332, 796-3194), within ten days to discuss your needs.

**Academic Honesty:** Per University policy (handbook page 19), you are expected to do your own work for this class. This includes and is not limited to the completion of all ALEKS work, including practice within ALEKS, and assessments. One example of dishonest behavior would be allowing another student to work problems for you in ALEKS. A second example would be having another student take all or part of an online assessment for you. If it is suspected that you violated this policy, you will need to retake the assessment under supervision.

*The policies and outline of this course are subject to change at the discretion of the instructor.*

Revised 12/20/08

## Using ALEKS

You will need the ALEKS Student Access Code provided to you when you purchased your online subscription. You will also need the Course Code for your section, which is listed below.

1<sup>st</sup> Type [www.aleks.com](http://www.aleks.com) in the URL line of your browser.

ALEKS will lead you through the process of creating an account. Above the Registered Users box you should click:

**New User? Sign Up Now!**

2<sup>nd</sup> To enroll in your specific section, you will need the appropriate course code:

**MQXE9-JRDAN – Section 1**

**4R3MJ-Y4NKF – Section 3**

On the first day of class, each of you will log in and we will examine the basics of using ALEKS. I will ask you to work your way through the “Answer Editor” tutorial so that you become familiar with how to enter mathematical expressions for assessments, on-line work and quizzes. You will then take the initial ALEKS assessment to get a baseline rating of your skills and readiness for the material in this course. **DO NOT** ask anyone for help, and do not use previous notes or the textbook for assistance. It is important that you always put forth your best effort when taking assessments, because this is how ALEKS determines whether or not you have mastered the material already learned.

ALEKS keeps track of (and lets your instructor see) how much you have mastered and what you are ready to learn. Below are the topics covered in this course.

**Our basic course content** →

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|--|----------------------|
| 1. Arithmetic Readiness                    | [Text: Chapter R]    |
| Fractions                                  |                      |
| Decimals                                   |                      |
| Proportions and percents                   |                      |
| 2. Real Numbers                            | [Text: Chapter 1]    |
| Number systems                             |                      |
| Real Number operations                     |                      |
| Order of Operations                        |                      |
| Substitution and evaluation                |                      |
| Algebraic symbols                          |                      |
| Properties of real numbers                 |                      |
| 3. Solving Linear Equations                | [Text: Chapter 2]    |
| Properties of Equality                     |                      |
| One occurrence of the variable             |                      |
| Several occurrences of the variable        |                      |
| Inequalities                               |                      |
| Applications: Geometry & Problem Solving   |                      |
| 4. Graphing and Functions                  | [Text: Chapter 3]    |
| Ordered pairs                              |                      |
| Graphing                                   |                      |
| Inequalities                               |                      |
| Writing Equations                          |                      |
| 5. Exponents and Polynomials               | [Text: Chapter 4, 5] |
| Properties of exponents                    |                      |
| Scientific Notation                        |                      |
| Polynomials                                |                      |
| Factoring                                  |                      |
| - Quadratic polynomials                    |                      |
| - Special formulas                         |                      |
| - Multivariable polynomials                |                      |
| 6. Rational Expressions                    | [Text: Chapter 6]    |
| Simplifying expressions                    |                      |
| Solving equations                          |                      |
| Complex Fractions                          |                      |
| Ratio, Proportion, and Applications        |                      |
| Variation                                  |                      |
| 7. Systems of Linear Equations             | [Text: Chapter 7]    |
| Linear equations                           |                      |
| Applications                               |                      |
| System of Linear Inequalities              |                      |
| 8. Radicals and Quadratic Equations        | [Text: Chapter 8, 9] |
| Simplifying radical expressions            |                      |
| Solving radical and quadratic equations    |                      |
| Pythagorean Theorem and other Applications |                      |