MATH101 16

Course Summary

Course : MATH101 **Title :** Introduction to College Algebra
Length of Course : 16
Prerequisites : N/A **Credit Hours :** 3

Description

Course Description: This course is an introduction to college algebra and is organized into six distinct parts, beginning with a review of basic mathematics skills. It then addresses the language of algebra, the definition, uses, and methods of solving equations and inequalities, exponents and polynomials, factoring, and rational expressions. Practical applications are emphasized throughout the course. This course does not fulfill the mathematics General Education Requirements, but it can be used as elective credit.

Course Scope:

The course is delivered online and is an introduction to college algebra. It is the first course in a two-sequence program, MATH101 and MATH110, but it may also be a stand-alone course providing the student with the essentials to take courses, which require a basic understanding of mathematics. The course includes the study of the language of algebra, and the use of equations, inequalities, polynomials, factoring and rational expressions.

Objectives

After completing the course, the student should be able to accomplish these Learning Objectives (LO):

1. Properly use the order of operations.
2. Simplify expressions involving real numbers.
3. Simplify algebraic expressions.
4. Evaluate algebraic expressions.
5. Solve algebraic equations.
6. Translate real life applications into algebraic equations.
7. Simplify polynomial expressions.
8. Factor polynomials.
9. Solve quadratic equations by factoring.
10. Compute mathematical operations (+, –, x, ÷) involving rational expressions.

Outline

Week 1: Review of Basic Math

Learning Objective(s)

Course LO-1

*Find the prime factorization of a number

*Add, subtract, multiply and divide fractions and mixed numbers

*Explain the relationship between prime factorization and fractions

Assignment(s)

Week #1 Forum: Introduction

Week #1 Lesson in Limespring

Week #1 Book Exam in Limespring

APUS Honor Pledge Assignment

Week 2: Review of Basic Math

Learning Objective(s)

Course LO-1

*Convert fractions, decimals and percents

*Solve basic real-life problems.

Assignment(s)

Week #2 Forum

Week #2 Lesson in Limespring

Week #2 Book Test in Limespring

Week 3: Real Numbers and Variables

Learning Objective(s)

Course LO-2

*Identify real numbers

*Add and subtract real numbers

*Multiply and divide real numbers

*Evaluate expressions involving exponents and apply proper order of operations

Assignment(s)

Week #3 Forum

Week #3 Lesson in Limespring

Week #3 Book Test in Limespring

Week 4: Real Numbers and Variables

Learning Objective(s)

Course LO-3

*Apply properties of real numbers

*Add and subtract like terms

*Identify algebraic expressions

*Evaluating algebraic expressions

Assignment(s)

Week #4 Forum

Week #4 Lesson in Limespring

Week #4 Book Test in Limespring

Week 5: Equations and Inequalities

Learning Objective(s)

Course LO-4

*Solve equations using the addition property

*Solving equations using the multiplication property

*Combine rules to solve equations

*Solve equation with fractions.

Assignment(s)

Week #5 Forum

Week #5 Lesson in Limespring

Week #5 Book Test in Limespring

Week 6: Equations and Inequalities

Learning Objective(s)

Course LO-4, LO-5

*Translate words to algebraic expressions.

*Apply formulas and problem solve

*Solve applications of linear equations

*Solve percent applications

*Solve elementary inequalities

Assignment(s)

Week #6 Forum

Week #6 Lesson in Limespring

Week #6 Book Test in Limespring

Week 7: Exponents and Polynomials

Learning Objective(s)

Course LO-6

*Apply properties of exponents to simplify expressions

*Evaluating negative exponents and scientific notation

Assignment(s)

Week #7 Forum

Week #7 Lesson in Limespring

Week #7 Book Test in Limespring

Week 8: Exponents and Polynomials

Learning Objective(s)

Course LO-6

*Identify polynomials.

*Add and subtract polynomials

*Multiply polynomials

*Recognize special products

*Divide polynomials

Assignment(s)

Week #8 Forum

Week #8 Lesson in Limespring

Week #8 Book Test in Limespring

Week 9: Midterm Exam

Learning Objective(s)

Course LO- 1 - 6

To assess your knowledge of basic math, language of algebra, equations and inequalities, polynomials.

Assignment(s)

Week #9 Forum Midterm Exam

Week 10: Factoring

Learning Objective(s)

Course LO-7

*Factor out the GCF

*Factoring by grouping terms

*Factor trinomials

*Apply the ac method to factor a trinomial

Assignment(s)

Week #10 Forum

Week #10 Lesson in Limespring

Week #10 Book Test in Limespring

Week 11: Factoring

Learning Objective(s)

Course LO-7

*Factor the difference of 2 perfect squares

*Apply appropriate factoring strategies

*Solving quadratic equations by factoring

Assignment(s)

Week #11 Forum

Week #11 Lesson in Limespring

Week #11 Book Test in Limespring

Week 12: Rational Expressions

Learning Objective(s)

Course LO-8

*Simplifying rational expressions

*Multiplying and dividing rational expressions

Assignment(s)

 Week #12 Forum

 Week #12 Lesson in Limespring

Week #12 Book Test in Limespring

Week 13: Rational Expressions

Learning Objective(s)

Course LO-5, LO-8

*Adding and subtracting rational expressions

*Simplifying a complex rational expression.

Assignment(s)

 Week #13 Forum

 Week #13 Lesson in Limespring

Week #13 Book Test in Limespring

Week 14: Rational Equations

Learning Objective(s)

Course LO-5, LO-8

*Solve equations involving rational expressions

*Solve real life applications of rational expressions

Assignment(s)

 Week #14 Forum

 Week #14 Lesson in Limespring

Week #14 Book Test in Limespring

Week 15: Review for Final Exam

Learning Objective(s)

Course LO-1 – 8

All Course Learning Objectives

Assignment(s)

<u>Week #15 Forum</u>

Review Past Lessons, Workbook and Book Tests in LimeSpring (Optional)

Week 16: Final Exam

Learning Objective(s)

Course LO-1 – 8

Demonstrate your knowledge of all course learning objectives

Assignment(s)

<u>Comprehensive Final Exam in Limespring</u>

Week #16 Forum

Evaluation

Reading Assignments: Please refer to the Course Outline section of this syllabus for the weekly reading assignments.

You will be required to complete the **APUS Honor Pledge Assignment** before submitting any other work. Please submit this in the **Assignments** area of the classroom.

Week 1 Introductions: Each student must log into the classroom and post your introduction in the forum. Your response is due by Sunday of Week 1. Your response must be a minimum of 250 words (a requirement) and include the following information.

    a. Your name
    b. Your university major or program
    c. Where you are in the program of study
    d. Your academic goals, to include why you are taking this class
    e. Information that you would like to share about yourself

Homework: Most weeks there will be a 'Book' in Limespring for you to complete, which includes a lesson section. Your homework score will come from your grade on the quizzes taken in the lesson section. Please refer to information in the Lessons section under Labs to learn how to access Limespring. Completion of the 'lessons' section in LimeSpring will constitute your homework grade. The homework will be worth 100 points. <u>The homework will be worth 10% of your</u> <u>course grade</u>. At the end of each week you need to submit your homework score to the assignments area of the classroom.

Forum Assignments: Under the Forum link you will see forums set up for each week. The first forum will be your introduction to the classroom (this is a course requirement-see above for details). Each forum assignment will require one main post due **Thursday** of each week and at least two comments to other students due **Sunday**. Please follow the directions on the forum, as each week will be different. Your comments should be well thought out with a 100-word minimum. Each main post will be worth 6 points and the comments will be worth 2 points each for a total of 10 points for each forum assignment. <u>Your forum participation will be 16% of</u> <u>your course grade</u>.

Weekly Book Exams: There will be a 'Book Exam' each week except for Weeks 9 (Midterm Exam), 15 (review) and 16 (Final Exam). The Book Exam will cover the material learned that week and practiced in the Limespring lessons and workbook. You can only take the Book Exam once, but it will be open note and

multiple-choice. You cannot take the Book Exam until you have completed the lessons and workbook. The due dates for the Books Exams are in the course outline below and must be followed. All tests will have a 1-hour time limit and will be worth 30 points each for a total of 390. <u>The weekly exams count as 39% of your course grade.</u>

Midterm Exam: The midterm exam will be during week 9 and will be worth 150 pts or <u>15% of your course grade</u>. It will be a two-hour online, open-note exam. This examination will cover all sections of the textbook covered during the semester. It will be a multiple-choice exam with 35 questions each worth 5 points. The questions will require computations and application of the material covered during the semester. Please coordinate with the professor for any special arrangements.

Unless the professor approves alternate arrangements, students should plan to take the final examination during the last week of the course. You will only be allowed to take this exam **once** except in unusual circumstances outside of your control.

Final Exam: The final exam will be during week 16 and will be worth 200 pts or <u>20% of your course grade</u>. It will be a two-hour online, open-note exam. This examination will cover all sections of the textbook covered during the semester. It will be a multiple-choice exam with 40 questions each worth 5 points. The questions will require computations and application of the material covered during the semester. Please coordinate with the professor for any special arrangements. Unless the professor approves alternate arrangements, students should plan to take the final examination during the last week of the course. You will only be allowed to take this exam **once** except in unusual circumstances outside of your control.

The points earned on the graded course assignments will determine the course grade. The final grade in the course will be based on total points.

Assignment grades will be complete within 5 days of the due-date of the assignment. Students' final course grades will be posted as soon as the instructor receives and evaluates the Final Exam. Official grades will continue to be issued by the University on the grade report form. Instructors have 7 days from the end of the semester to submit their grades to the University.

Grading:

Name	Grade %
Forum Assignments	10.00 %
Week #1 Forum	0.63 %
Week #2 Forum	0.63 %
Week #3 Forum	0.63 %
Week #4 Forum	0.63 %
Week #5 Forum	0.63 %
Week #6 Forum	0.63 %
Week #7 Forum	0.63 %
Week #8 Forum	0.63 %
Week #9 Forum	0.63 %
Week #10 Forum	0.63 %
Week #11 Forum	0.63 %
Week #12 Forum	0.63 %
Week #13 Forum	0.63 %
Week #14 Forum	0.63 %
Week #15 Forum	0.63 %
Week #16 Forum	0.63 %
Homework	13.00 %
LimeSpring Lessons	13.00 %
Weekly Quizzes	42.00 %
APUS Honor Code and Pledge	0.09 %

LimeSpring Book 1 Exam	3.50 %
LimeSpring Book 2 Exam	3.50 %
LimeSpring Book 3 Exam	3.50 %
LimeSpring Book 4 Exam	3.50 %
LimeSpring Book 5 Exam	3.50 %
LimeSpring Book 6 Exam	3.50 %
LimeSpring Book 7 Exam	3.50 %
LimeSpring Book 8 Exam	3.50 %
LimeSpring Book 10 Exam	3.50 %
LimeSpring Book 11 Exam	3.50 %
LimeSpring Book 12 Exam	3.50 %
LimeSpring Book 13 Exam	3.50 %
LimeSpring Book 14 Exam	3.50 %
Final Exam	20.00 %
Final Exam	20.00 %
Midterm Exam	15.00 %
Midterm Exam	15.00 %

Materials

Book Title: LimeSpring - access instructions provided inside the classroom

Author:

Publication Info: LimeSpring

ISBN: NA

Detailed instructions for each week's work are given in the lessons within the classroom. Course materials are provided through **Limespring**. Instructions for accessing the site are in the lessons under the Labs tab.

Students will need a calculator to successfully complete this course. The calculator should include a memory and square root function. At the student's discretion, a scientific calculator capable of performing statistical functions or a computer spreadsheet program like Microsoft Excel may be used. Students may make use of the above for all graded assignments during the course.

Required Readings: See the course outline. Web Sites

In addition to the required course texts, the following public domain web sites are useful. Please abide by the university's academic honesty policy when using Internet sources as well. Note web site addresses are subject to change.

Site Name	Web Site URL/Address
Mathematics Videos	http://www.apus.edu/media/mathWV/index.htm
Cool Math	http://www.coolmath.com

Math	http://www.math.com
Calculator website	http://www.calculator.com
Dr. Math	http://mathforum.org/dr.math/
Purple Math	http://www.purplemath.com/

Course Guidelines

Citation and Reference Style

- Attention Please: Students will follow the APA Format as the sole citation and reference style used in written work submitted as part of coursework to the University. Assignments completed in a narrative essay or composition format must follow the citation style cited in the APA Format.

Tutoring

- Tutor.com offers online homework help and learning resources by connecting students to certified tutors for one-on-one help. AMU and APU students are eligible for 10 free hours* of tutoring provided by APUS. Tutors are available 24/7 unless otherwise noted. Tutor.com also has a SkillCenter Resource Library offering educational resources, worksheets, videos, websites and career help. Accessing these resources does not count against tutoring hours and is also available 24/7. Please visit the APUS Library and search for 'Tutor' to create an account.

Late Assignments

- Students are expected to submit classroom assignments by the posted due date and to complete the course according to the published class schedule. The due date for each assignment is listed under each Assignment.
- Generally speaking, late work may result in a deduction up to 15% of the grade for each day late, not to exceed 5 days.
- As a working adult I know your time is limited and often out of your control. Faculty may be more flexible if they know ahead of time of any potential late assignments.

Turn It In

- Faculty may require assignments be submitted to Turnitin.com. Turnitin.com will analyze a paper and report instances of potential plagiarism for the student to edit before submitting it for a grade. In some cases professors may require students to use Turnitin.com. This is automatically processed through the Assignments area of the course.

Academic Dishonesty

- Academic Dishonesty incorporates more than plagiarism, which is using the work of others without citation. Academic dishonesty includes any use of content purchased or retrieved from web services such as CourseHero.com. Additionally, allowing your work to be placed on such web services is academic dishonesty, as it is enabling the dishonesty of others. The copy and pasting of content from any web page, without citation as a direct quote, is academic dishonesty. When in doubt, do not copy/paste, and always cite.

Submission Guidelines

- Some assignments may have very specific requirements for formatting (such as font, margins, etc) and submission file type (such as .docx, .pdf, etc) See the assignment instructions for details. In general, standard file types such as those associated with Microsoft Office are preferred, unless otherwise specified.

Disclaimer Statement

- Course content may vary from the outline to meet the needs of this particular group.

Communicating on the Forum

- Forums are the heart of the interaction in this course. The more engaged and lively the exchanges, the more interesting and fun the course will be. Only substantive comments will receive credit. Although there is a final posting time after which the instructor will grade comments, it is not sufficient to wait until the last day to contribute your comments/questions on the forum. The purpose of the forums is to actively participate in an on-going discussion about the assigned content.
- "Substantive" means comments that contribute something new and hopefully important to the discussion. Thus a message that simply says "I agree" is not substantive. A substantive comment contributes a new idea or perspective, a good follow-up question to a point made, offers a response to a question, provides an example or illustration of a key point, points out an inconsistency in an argument, etc.
- As a class, if we run into conflicting view points, we must respect each individual's own opinion. Hateful and hurtful comments towards other individuals, students, groups, peoples, and/or societies will not be tolerated.

University Policies

[Student Handbook](#)

- [Drop/Withdrawal policy](#)

- [Extension Requests](#)

- [Academic Probation](#)

- [Appeals](#)

- [Disability Accommodations](#)

The mission of American Public University System is to provide high quality higher education with emphasis on educating the nation's military and public service communities by offering respected, relevant, accessible, affordable, and student-focused online programs that prepare students for service and leadership in a diverse, global society.