Course Information

Course Title:	Intermediate Algebra
Course Code:	None
Credits:	0
Credit Provider:	Westcott Courses
Proctored Final:	No

Textbook Requirement

No outside textbook is needed. Our Omega Math(TM) courses contain all the lessons, homework, solution manuals, quizzes, tests and the final. Our lessons start out with the easiest examples, and then move slowly to the more advanced problems. Between examples, there are interactive problems which make sure the student understands the concepts, as well as enables the student to store the information into long term memory.

Course Description

Intermediate Algebra was designed to broaden and expand the concepts of Elementary Algebra. This course covers all the essential topics needed to be successful in College Algebra, Precalculus and/or Statistics. Topics include algebraic techniques on real numbers, order of operation, exponents, absolute value, factoring, inequalities, polynomials, rational expressions and equations, radical expressions and equations, linear and quadratic equations, complex numbers, graphs of linear and quadratic equations, graphs of inequalities, nonlinear inequalities, functions and their graphs, logarithmic and exponential functions, linear systems, systems of inequalities, sequences and series, and mathematical modeling. Upon completion, students will be able to solve real world applications and use appropriate models for analysis.

Intermediate Algebra is an Omega MathTM Course.

Note: This class is equivalent to one year of High School Algebra ll.

Note: This course was previously offered as Math 139 through Woodbury University and Math 104 through United States University.

Prerequisite:

Suggested: Either a year of high school Algebra l or one semester of Elementary Algebra with a grade of C or better.

Approvals for this Course

Meets Common Core Requirements: Yes

UC Approved: Yes

Learning Outcomes

At the conclusion of this course, students should be able to:

1. Understand the properties of real numbers, roots and exponents and be able to apply them to algebraic expressions.
2. Solve a variety of linear equations, inequalities and their applications.
3. Perform algebraic operations with polynomials.
4. Simplify and factor algebraic expressions.
5. Solve equations involving rational and radical expressions.
6. Solve quadratic equations using the factor method, the quadratic formula, the square root property, and completing the square.
7. Solve equations and inequalities involving absolute value.
8. Solve systems of linear equations with algebraic and graphical methods.
9. Perform basic operations on functions such as addition, subtraction, multiplication, division and composition.
10. Represent functions verbally, numerically, graphically and algebraically.
11. Be able to find the inverse of a function and its graph.
12. Apply properties of logarithmic and exponential functions.
13. Solve exponential and logarithmic functions.
14. Graph a variety of equations, including linear, quadratic, absolute value, and exponential and logarithmic functions.

    Demonstrate proficiency in strategic competence, conceptual understanding and adaptive reasoning.
15. Express relationships among quantities using variables.
16. Solve real life applications involving social and civic significance.
17. Demonstrate real-world problem solving skills: analyze the problem and break it into parts, recognize the concepts applicable to the parts, recognize the relationship between the parts, write the concepts in proper algebraic representations, solve the problem in symbols, interpret the final results.
18. Recognize a language description, geometric and algebraic representation, and be able to transfer from one form to the other.

Methods Of Evaluation

Homework quizzes 15%

Chapter tests 60%

Final Exam 25%

(You must get at least 60% on this final in order to pass the class with a C or better.)

Homework Quizzes: 15%

Homework assignments are essential in a mathematics course. It is not possible to master the course without a considerable amount of time being devoted to studying the concepts and solving problems. Each lesson contains a set of homework problems, and you are required to do all the odd problems for each section. Work out each problem, and then check the solution manual for a detailed solution. Do not continue to the next problem until you understand your mistake. Once you feel comfortable with the homework set, take the homework quiz for that section. The homework quizzes are revised problems from the homework sets. You may take each quiz twice, and the higher of the two scores is used to calculate your quiz grade. Once you take a quiz, figure out what you did wrong on the problems that you missed and then try the quiz again. It is important to figure what you did wrong before you push forward. If you figure out your errors at this step, you will be less likely to make the same error on the test or the final. The struggle to figure out what you did wrong stores the mathematics into your long-term memory, and aids in building abstract thinking.

Chapter Tests: 60%

After you have completed a chapter, and understand everything in the lessons, homework sets and quizzes, take the chapter test. The chapter tests are revised problems from the quizzes. You may take each chapter test twice, and the higher of the two scores is used to calculate your chapter test grade. Once you take a chapter test, figure out what you did wrong on the problems that you missed and then try the chapter test again. It is important to figure what you did wrong before you push forward. If you figure out your errors at this step, you will be less likely to make the same error on the final.

Assessment

A 90-100 A Clearly stands out as excellent performance and, exhibits mastery of learning outcomes.

B 80-89 B Grasps subject matter at a level considered to be good to very good, and exhibits partial mastery of learning outcomes.

C 70-79 C Demonstrates a satisfactory comprehension of the subject matter, and exhibits sufficient understanding and skills to progress in continued sequential learning.

D 60-69 D Quality and quantity of work is below average and exhibits only partial understanding and skills to progress in continued sequential learning.

F 0-59 F Quality and quantity of work is below average and not sufficient to progress.

Instructional Process

In this course we will explore mathematical concepts, methods and applications from life issues, business and finance, social and environmental issues. Civic and social issues will be used as problems to apply the subject principles. Using the civic, social, and life related examples will help students understand the subject at a deeper level. After an introduction in each section, problems will be solved that start with the easiest examples and move slowly to the more advanced problems with Student Interactive Problems (SIP) in between. The SIPs are important! They give you a chance to slow down and make sure you understand the material. If you get the problem correct, continue on with the next example. If you get the problem wrong, you will be taken to a page that works out the problem in detail. The SIPs play a large part in storing the topics along with their procedures into your long-term memory. Each homework set contains applications for that lesson. These real life applications create a better understanding of math in our world and how it applies to every day life.

Course Content Menu

Chapter 1 - Numerical Operations & Variables

Lessons	Homework	Quiz
1.1 - Properties of Real Numbers	1.1	1.1
1.2 - Exponents, Absolute Value & Order of Operation	1.2	1.2
1.3 - The Language of Algebra	1.3	1.3
1.4 - Scientific Notation & Conversion of Units	1.4	1.4
1.5 - Evaluating Algebraic Expressions	1.5	1.5
Chapter 1 Test (27 questions)		

Chapter 2 - Polynomials

Lessons	Homework	Quiz
2.1 - Addition & Subtraction of Polynomials	2.1	2.1
2.2 - Properties of Exponents	2.2	2.2
2.3 - Multiplication of Polynomials	2.3	2.3
2.4 - Division of Polynomials	2.4	2.4
2.5 - Factoring Polynomials I	2.5	2.5
2.6 - Factoring Polynomials II	2.6	2.6
Chapter 2 Test (25 questions)		

Chapter 3 - Equations, Inequalities and Problem Solving

Lessons	Homework	Quiz

3.1 - Linear and Literal Equations	3.1	3.1
3.2 - Applications Involving Rate, Time & Distance	3.2	3.2
3.3 - Applications Involving Mixture	3.3	3.3
3.4 - Applications Involving Ratio, Proportion & Consecutive Numbers	3.4	3.4
3.5 - Linear Inequalities	3.5	3.5
3.6 - Equations & Inequalities Involving Absolute Value	3.6	3.6
Chapter 3 Test (26 questions)		

Chapter 4 - Rational Expressions and Equations

Lessons	**Homework**	**Quiz**
4.1 - Introduction to Rational Expressions	4.1	4.1
4.2 - Multiplication and Division of Rational Expressions	4.2	4.2
4.3 - Addition and Subtraction of Rational Expressions	4.3	4.3
4.4 - Rational Equations	4.4	4.4
4.5 - Complex Fractions	4.5	4.5
Chapter 4 Test (24 questions)		

Chapter 5 - Radical Expressions and Equations

Lessons	**Homework**	**Quiz**
5.1 - Introduction to Radical Expressions	5.1	5.1
5.2 - Addition and Subtraction of Radical Expressions	5.2	5.2
5.3 - Multiplication and Division of Radical Expressions	5.3	5.3
5.4 - Negative and Rational Exponents	5.4	5.4
5.5 - Radical Equations	5.5	5.5
5.6 - Complex Numbers	5.6	5.6
Chapter 5 Test (30 questions)		

Chapter 6 - Quadratic Equations

Lessons	**Homework**	**Quiz**

6.1 - Factor and Square Root Methods	6.1	6.1
6.2 - The Quadratic Formula	6.2	6.2
6.3 - Completing the Square	6.3	6.3
6.4 - Right Triangles and the Pythagorean Theorem	6.4	6.4
6.5 - Distance and Midpoint Formulas	6.5	6.5
6.6 - Non-linear Inequalities	6.6	6.6
Chapter 6 Test (24 questions)		

Chapter 7 - Graphs of Equations and Inequalities

Lessons	**Homework**	**Quiz**
7.1 - The Coordinate Plane & the Slope of a Line	7.1	7.1
7.2 - Graphing a Linear Equation	7.2	7.2
7.3 - Equations of Lines	7.3	7.3
7.4 - Graphs of Quadratic Equations	7.4	7.4
7.5 - Graphs of Linear Inequalities	7.5	7.5
Chapter 7 Test (25 questions)		

Chapter 8 - Linear Systems & Functions

Lessons	**Homework**	**Quiz**
8.1 - Linear Systems in Two Variables	8.1	8.1
8.2 - Systems of Linear Inequalities	8.2	8.2
8.3 - Introduction to Functions	8.3	8.3
8.4 - Domain & Range of a Function	8.4	8.4
8.5 - Composition of Functions	8.5	8.5
8.6 - Inverse Functions	8.6	8.6
Chapter 8 Test (32 questions)		

Chapter 9 - Exponential and Logarithmic Functions

Lessons	**Homework**	**Quiz**
9.1 - Exponential Functions	9.1	9.1
9.2 - Logarithmic Functions	9.2	9.2
9.3 - Properties of Logarithms	9.3	9.3

9.4 - Exponential and Logarithmic Equations	9.4	9.4
9.5 - Sequences and Series	9.5	9.5
Chapter 9 Test (29 questions)		
Intermediate Algebra Final Exam		

Course Content Menu

This course is online and your participation at home is imperative. A minimum of 8 - 10 hours per week of study time is required for covering all of the online material to achieve a passing grade. You must set up a regular study schedule. You have five months of access to your online account with a thirty-day extension at the end if needed. If you do not complete the course within this time line, you will need to enroll in a second term.

Schedule

Below is the suggested time table to follow to stay on a 17 week schedule for the course. The following schedule is the minimum number of sections that need to be completed each week if you would like to finish in a regular semester time frame. You do not have to adhere to this schedule. You have five months of access plus a 30 day extension at the end if needed. You can finish the course as soon as you are able, with a minimum coursework time of at least four weeks.

Week	**Complete Sections**
1	1.1 - 1.3
2	1.4 - 2.1
3	2.2 - 2.4
4	2.5 - 3.1
5	3.2 - 3.4
6	3.5 - 4.1
7	4.2 - 4.4
8	4.5 - 5.2
9	5.3 - 5.5
10	5.6 - 6.2
11	6.3 - 6.5
12	6.6 - 7.2
13	7.3 - 7.5
14	8.1 - 8.3

15	8.4 - 8.6
16	9.1- 9.3
17	9.4- 9.5
	Final Exam

Code of Conduct:

It is the student's responsibility and duty to read the information below and become acquainted with all provisions of what constitutes academic misconduct involving cheating and plagiarism. Students are required to read each statement below, and the given repercussion. There are no exceptions to these policies, and the pretext of not reading each part will not be deemed as a reasonable excuse to contest the policies.

Code of Ethics:

Regulations and rules are necessary to implement for classroom as well as online course behavior. Students are expected to practice honesty, integrity and respect at all times. It is the student's responsibility and duty to become acquainted with all provisions of the code below and what constitutes misconduct.

Respectful communications:

When contacting Westcott Courses, you agree to be considerate and respectful. Communications from a student which are considered by our staff to be rude, insulting, disrespectful, harassing, or bullying via telephone, email, or otherwise will be considered a disrespectful communication and will result in a formal warning.

We reserve the right to refuse service. If we receive multiple disrespectful communications from person(s) representing the student, or the student themselves, the student will be excluded from taking future courses at Westcott Courses.

Grading information and proctored final policies:

The grading rules are put in place to protect the integrity of online education by stopping grade inflation, which is done by demanding a display of competency in exchange for a grade. By agreeing to the terms of service agreement, you agree to read the 'Grading' Policy from within your account, and the 'Proctored Final Information' page, if applicable. You have 24 hours after your first log-in to notify us if you do not agree to the grading policy and proctored final policy (if applicable) outlined in the pages inside of your account, otherwise it is assumed that you agree with the policies. There are no exceptions to these policies, and the pretext of not reading the pages will not be deemed as a reasonable excuse to contest the policies.

The definition of academic cheating is an act of dishonesty in order to obtain a higher grade in the course, and to gain an advantage over other students in the course.

To maintain academic standards, students are expected to practice honesty, integrity and respect at all times. Students who violate the policies of cheating, plagiarizing, or other academic misconduct will result in following actions.

1) Cheating in any way on the final exam results in an F on the final and an F in the class.

This includes, but is not limited to any form of collaboration, use of unauthorized materials, receiving or providing unpermitted assistance on the exam, using outside digital assistance such as a cell phone, tablet, ETC. to communicate with others or access outside websites, having someone else take the exam for you, taking an exam for another student, failing to stop working on the exam when the time is up.

Final exams are secure tests and the intellectual property of Westcott Courses. Taking screen shots of a digital final or copying a paper test is stealing our intellectual property and cheating. It is equivalent to stealing a copy of the final exam off an instructor's desk. When one student obtains the questions on a final, it means that other students who don't have the questions on the final are at a disadvantage. Once a final exam has been compromised it is no longer secure, and the exam is unfair for those who have not performed an act of dishonesty to gain the advantage.

Each of the infractions above represents a result of performing an act of dishonesty in order to obtain a higher grade in the course, and to gain an advantage over other students in the course. The result of any of the above offenses is an F in the course. Students who violate the above policy may retake the course after a first offense; however, a second offense will result in expulsion and students will no longer be able to take other courses at Westcott Courses.

Students are responsible for clicking on the "Proctored Final Information" link (which is on student's Main Menu), and reviewing the list of Authorized Materials for each course's final exam. Since each course is different, the "Authorized Materials" for each final is different. For example, some courses permit notes, while others do not.

2) Plagiarism: All of the following are considered plagiarism, and will result in a zero on the plagiarized assignment, and there are no opportunities to redo the assignment.

Merriam-Webster defines plagiarism as "the act of using another person's words or ideas without giving credit to that person"

Plagiarism includes, but is not limited to:

* having somebody else write your assignment for you

* turning in an assignment that contains work that is not your own

* changing words in phrases, sentences and/or blocks of text without giving credit to the source (paraphrase)

* copying ideas, phrases, sentences or entire blocks of text without giving credit to the source

* not crediting the correct source by providing incorrect information

Plagiarism is an act of fraud, and can usually be avoided by using quotation marks and citing the source of the material. Instructors apply plagiarism software to find assignments that contain plagiarized material. Again, assignments that contain one of the above infractions will receive a zero on the assignment and the student will not have the opportunity to redo the assignment.

It is important to note that saving all your assignments to the end of the course, and then turning in multiple assignments that have been plagiarized will result in zeros on all of those assignments. This may mean that you no long have enough points in the course to pass the class. Thus, turning in assignments one at a time and waiting for instructor feedback in-between is important for learning and making sure that you maximize your possible points.

If you have questions, please read more information about plagiarism at plagiarism.org, or ask your instructor.

Other Examples of Academic Misconduct:

1) Other forms of cheating include altering an exam and submitting it for regarding, providing false excuses to postpone due dates, fabricating data or references, claiming that Westcott Courses lost your test and/or quiz scores, sending emails to Westcott claiming you did not know what you were doing was cheating.

2) Unauthorized collaboration - working with others on graded course work without specific permission of the instructor, including homework assignments, programs, quizzes and tests.

3) Copying Westcott Courses content and posting it on the internet. This includes assignments, quizzes, and tests.

By signing up for a course, you are legally signing a contract that states that the person who is named taking this course is the actual individual doing the course work and all examinations. You also agree that for courses that require proctored testing, that your final will be taken at a college testing center, a Sylvan Learning center, or at home using the online proctor. Also, the individual signed up for this course will be the one taking the test. Failure to do so will be considered a breach of Westcott Courses policies.

Important Notes:

This syllabus is subject to change and / or revision during the academic year. Students with documented learning disabilities should notify our office upon enrollment, as well as make sure we let the testing center know extended time is permitted. Valid documentation involves educational testing and a diagnosis from a college, licensed clinical psychologist or psychiatrist.