

MAT 100 – Introductory Algebra – Syllabus

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Student Consultation Hours: MWF 1:00-2:00, TR 9:30-10:30

Course Description: This course studies arithmetic for both integers and fractions, exponents, roots, linear and quadratic equations, factoring, rational expressions, modeling problems, and formula manipulations. Emphasis is on drill in computational algebra. The purpose of this course is to prepare students in math-intensive majors for further studies in college algebra, trigonometry, or calculus. **Not open to students who have a math placement level of 4 or higher (whether by testing or successful completion of prior coursework).**

Prerequisites: This course is designed to prepare students with introductory algebra skills for the mathematics course required by their majors. Enrollment is restricted to those students with a Mathematics Placement level of 1 to 3. Students can set their placement test using a wide variety of metrics (including SAT-M, ACT-M, ALEKS, prior HS or college coursework). Contact testing@ship.edu for more information about mathematics placement.

General Course Information: This course is worth 3 credits which students can use towards the 120 credits needed for graduation. A C or better is required in this course to earn Level 4 placement (and thus move on to MAT 140 – College Algebra). A D will earn Level 3 placement (which allows a student to move on to take MAT 117 – Applied Statistics). Note that students who are Level 1 or 2 can take MAT 105 – Mathematics for Liberal Studies with no prior coursework.

Textbook: Intermediate Algebra (2e) by Lynn Maracek and Andrea Honeycutt Mathis (<https://openstax.org/details/books/intermediate-algebra-2e>) with Prealgebra(2e) by Lynn Maracek, MaryAnne Anthony-Smith, and Andrea Honeycutt Mathis as a reference resource (<https://openstax.org/details/books/prealgebra-2e>). This is a free open-source textbook.

Online Platform MyOpenMath: Students will use the free online platform MyOpenMath for online assignments such as homework. Some advantages to doing the problems online is that there is an unlimited supply of practice problems, the homework software will walk you through problems step by step, and I will be able to see what problems you are working on.

MyOpenMath Course ID: 236376

Enrollment Key: join100Taylor

Course Goals:

- To prepare you with the algebra skills required further mathematics at Shippensburg University.
- To help you develop the study skills for being successful in a college-level mathematics course.
- To help you build your confidence in your mathematics skills.
- To provide a new approach to learning traditional algebraic skills.

Student Expectations:

- Be prepared to work in class EVERY DAY.
- Work on the online assignments and tutorials on a DAILY basis.
- Come see me during office hours (or schedule an appointment) as soon as you need help.
- See the tutors in the Learning Center (Mowery Hall) if you need still more help.
- Be active in class. Participate in class discussions. Keep your group on task.
- Check your email and the course MyOpenMath site regularly.
- Be responsible for any material missed when you are absent.
- ALWAYS ask questions if you need help or need a review of previous material. You need to communicate your difficulties to me to get the appropriate help in class.

Assessment:

Worksheets –

- Some classes we will spend practicing problems on a specific topic. The score on a worksheet is between 0 and 4 points, depending on the proportion completed.
- If the worksheet is not completed during class time, it can be submitted next class period.
- If you are absent, you will receive a 0. Your two lowest worksheet scores will be dropped by the end of the semester.
- Students with a University required absence will need to inform the professor PROMPTLY to be submit a worksheet for credit when absent.
- **Your WORKSHEET AVERAGE is worth 20% of your overall grade.**

Daily Quizzes -

- Days when there is no worksheet, there will be a short quiz. The score on the quiz is between 0 and 4 points.
- If you are absent, you will receive a 0. Your two lowest daily quiz scores will be dropped by the end of the semester.
- Students with a University required absence will need to inform the professor PROMPTLY to be eligible for a makeup quiz.
- **Your QUIZ AVERAGE is worth 20% of your overall grade.**

Online Homework -

- Each topic we cover in the course has an associated online homework assignment.
- Some time may be available during class to work on online homework. Remaining work will need to be completed outside of class, alone or with a group of your classmates.
- Plan to work after each class to complete material covered that day.
- You may redo online homework assignments multiple times to receive a higher score.
- Late homework may be submitted (up to the unit exam) for up to 80% credit using a Late Pass. Students have an unlimited supply of late passes.
- **Your Online Homework Average is worth 20% of your overall grade.**

Exams

- There will be three unit exams and one final exam given this semester. The topics and student learning objectives (SLOs) for each unit are given below.
- **Your Exam Average is worth 40% of your overall grade.**
- Scientific (non-graphing) calculators such as the TI-30XIIS are allowed on exams. Calculator apps on devices may be used in regular classes, but not on exams.

Grade Scale

A	A-	B+	B	B-	C+	C	D	F
92-100	90-91	87-89	82-86	80-81	77-79	70-76	60-69	Under 60

Student Learning Objectives (by unit)

UNIT 1 (Chapter 1: Foundations and Chapter 2: Solving Linear Equations)

- (1.2 & 1.3) Students will be able to perform arithmetic operations (adding, subtracting, multiplying, and dividing) with fractions and signed numbers both by hand and with a scientific calculator.
- (1.1) Students will be able to evaluate numerical expressions using the order of operations to expressions containing exponents and parentheses.
- (1.1 & 1.5) Students will understand the difference between an equation and an algebraic expression, and be able to simplify by combining like terms and the distributive property.
- (1.4) Students will be able to interpret percents and be able to convert between proportions, decimals, and percents fluidly.
- (2.1) Students will be able to solve linear equations using the addition property of equality.
- (2.1) Students will be able to solve linear equations using the multiplication property of equality.
- (2.1) Students will be able to solve general linear equations by combining the above properties.
- (2.2) Students will be able to solve a word problem involving a linear equation.
- (2.3) Students will be able to solve a formula for a specific variable.

UNIT 2 (Chapter 3: Graphs and Functions)

- (3.1) Students should be able to read information shown on an xy-coordinate system and plot and ordered pair.
- (3.1) Students will be able to graph a linear equation by plotting points.
- (3.1) Students will be able to graph vertical and horizontal lines.
- (3.1) Students will be able to find the x- and y-intercepts and use them to graph a line.
- (3.1) Students will be able to identify the x-and y-intercepts from a graph.
- (3.2) Students will be able to identify the slope of a line from a graph or from its equation.
- (3.2) Students will be able to determine the slope of a line given 2 points on the line.
- (3.2) Students will be able to use the slope and a point to graph a linear equation and vice-versa to determine the equation of a line from looking at its graph.
- (3.3) Students will be able to determine the equation of a line given its slope and a point or two points on the line.
- (3.5) Students will be able to use function notation to evaluate functional expressions in both algebraic and application problems.

UNIT 3 (Chapter 5: Polynomials and Polynomial Functions and Chapter 6: Factoring)

- (5.1) Students will be able to add and subtract polynomial expressions.
- (5.2) Students will understand the properties of exponents.
- (5.3) Students will be able to multiply polynomials.
- (6.1) Students will be able to factor out a greatest common factor from a polynomial.
- (6.1) Students will be able to factor by grouping.
- (6.2) Students will be able to factor simple trinomials.

- (6.3) Students will be able to factor the difference of two squares or perfect square trinomials.
- (6.4) Students will be able to factor trinomials using various methods.
- (6.5) Students will be able to solve quadratic equations by factoring.

Notices:

- Accommodations can be made for students who, at the beginning of the semester, identify themselves to the instructor as having special needs. If you have a disability that may require special consideration and/or modifications, please provide documentation from the Office of Accessibility Resources (OAR), suggestions for assistance to maximize class participation, completion of assignments, etc., by the end of the second week of classes.
- It is the policy of Shippensburg University to expect academic honesty. Students who commit breaches of academic honesty will be subject to the various sanctions outlined in the Undergraduate Catalog. See page 25 of the Undergraduate Catalog http://www.ship.edu/Catalog/Undergraduate_Catalogs/Undergraduate_Catalog/
- Shippensburg University and its faculty are committed to assuring a safe and productive educational environment for all students. To meet this commitment and to comply with Title IX of the Education Amendments of 1972 and guidance from the Office of Civil Rights, the University requires faculty members to report incidents of sexual violence shared by students to the University's Title IX Coordinator. The only exceptions to the faculty member's reporting obligation are when incidents of sexual violence are communicated by a student during a classroom discussion, in a writing assignment for a class, or as part of a University-approved research project. Information regarding the reporting of sexual violence and the resources that are available to victims of sexual violence is set forth as http://www.ship.edu/no_more/

Week	Topics Covered	Assignments
1	Welcome to the Course Arithmetic with Fractions and Signed Numbers (1.2 and 1.3) Number Sense How to Properly Use a Scientific Calculator Evaluating Numerical Expressions (1.1) Order of Operations (1.1) Equations vs. Algebraic Expressions Simplifying by Combining Like Terms (1.1)	MOM 1: Arithmetic and Number Sense (1.2 & 1.3) MOM 2: Evaluating Algebraic Expressions (1.1)
2	Percents, Proportions, Fractions and Decimals (1.4)	MOM 4: Percents, Decimals, and Fractions (1.4)
3	Simplifying by applying the Distributive Property (1.5) Solving Equations with the Addition Property of Equality (2.1) Solving Equations with the Multiplication Property of Equality (2.1)	MOM 3: Simplifying Algebraic Expressions (1.5) MOM 5: Solving Linear Equations Part 1 (2.1)
4	Solving General Linear Equations (2.1) Solving Application Problems involving Linear Equations (2.2) Solving Formulas for a Specified Variable (2.3)	MOM 6: Solving Linear Equations Part 2 (2.1) MOM 7: Linear Applications (2.2 and 2.3)
5	Review for Unit 1 Exam Unit 1 Exam	
6	Plotting Points and Reading Graphs (3.1) Graphing a Line by Plotting Points (3.1) Vertical and Horizontal Lines (3.1) x- and y-Intercepts (3.1)	MOM 8: Graphing and the xy-coordinate system (3.1)
7	Slope of a Line (3.2)	MOM 9: Slope of a Line (3.2)
8	Equation of a Line (3.3) Function Notation (3.5)	MOM 10: Equation of a Line (3.3) MOM 11: Function Notation (3.5)
9	Review for Unit 2 Exam Unit 2 Exam	
10	Polynomial Arithmetic (5.1 - 5.3)	MOM 12: Polynomial Arithmetic (5.1 - 5.2) MOM 13: Multiplying Polynomials (5.3)
11	Introduction to Factoring Polynomials (6.1 - 6.2)	MOM 14: Factoring Polynomials Part 1 (6.1 - 6.2)
12	More with Factoring Polynomials (6.3 - 6.4)	MOM 15: More Factoring (6.3 - 6.4)

13	Solving Equations with Factoring (6.5)	MOM 16: Solving Equations with Factoring (6.5)
14	More (6.5)	
15	Review for Unit 3 Exam Unit 3 Exam Review for Final Exam	
16	Review for CUMULATIVE Final Exam	