



**Mrs. Lindsay Harris**

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Office Hours: 7:30-8:15am

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Precalculus 1 Credit <a href="http://www.wlhs.wlwv.k12.or.us/Page/3496">http://www.wlhs.wlwv.k12.or.us/Page/3496</a>	Math 111/112, 5 Credits each ACC Website: <a href="http://www.clackamas.edu/acc">www.clackamas.edu/acc</a>
Prerequisite: Completion of trigonometry with C or better or recommendation of advanced algebra teacher.	ACC Prerequisites: MTH-095 with a C or better, or placement in MTH-111

**Textbook:** Precalculus: Mathematics for Calculus. James Stewart. 5<sup>th</sup> edition.

**WLHS Course Description:** This course is the analysis of polynomial, rational, power, exponential, logarithmic, trigonometric, and piecewise functions and their general characteristics. In addition, logic, probability, statistics, matrices, transformations, composition, inverses, and the binomial theorem will be covered. Students will be exposed to some beginning calculus topics. Applications are emphasized throughout the material and algebraic, graphical, numerical, and verbal methods will be used to analyze and interpret problems.

**ACC Course Description:** A transfer course designed for students preparing for trigonometry, statistics, or calculus. The focus is on the analysis of piecewise, polynomial, rational, exponential, logarithmic, power functions and their properties. These functions will be explored symbolically, numerically and graphically in real life applications and mathematical results will be analyzed and interpreted in the given context. The course will also include transformations, symmetry, composition, inverse functions, regression, the binomial theorem and an introduction to sequences and series.

**Major Units:**

Chapter 1	Algebraic Fundamentals	Chapter 7	Analytic Trigonometry
Chapter 2	Transformations of Functions	Chapter 8	Polar Coordinates and Vectors
Chapter 3 Functions	Polynomial and Rational	Chapter 9	Systems of Equations and Inequalities
Chapter 4	Exponential and Logarithmic Functions	Chapter 10	Analytic Geometry
Chapter 5	Trigonometric Functions of Real Numbers	Chapter 11	Sequences and Series
Chapter 6	Trig Functions of Angles	Chapter 12	Limits and Derivatives

**Learning Objectives:** Using a graphing calculator to investigate and solve problems, by engaging students in critical thinking tasks. Students will be required to communicate mathematical ideas verbally, graphically, algebraically, and numerically. Describe general properties of functions as they relate to calculus, using the concept of limit as it pertains to sequences and functions, analyzing the graphs of polynomial, rational, radical, and transcendental functions, using the Pythagorean Theorem to develop and understand both circular and right triangle trigonometry.

**Learning Goals:**

- ✓ Find and interpret average rate of change and communicate how it applies to a relative application
- ✓ Find and interpret the difference quotient and explore its application in real life
- ✓ Find and interpret properties of piecewise-defined, polynomial, rational, power, radical, exponential and logarithmic functions
- ✓ Evaluate and graph piecewise-defined, polynomial, rational, power, radical, exponential and logarithmic functions
- ✓ Solve equations involving piecewise-defined, polynomial, rational, power, radical, exponential and logarithmic functions
- ✓ Apply the solving of piecewise-defined, polynomial, rational, power, radical, exponential and logarithmic functions within real life applications and effectively communicate the results in the proper context
- ✓ Analyze and communicate differences in behaviors of different types of functions both graphically and numerically
- ✓ Data will be modeled using the appropriate regression and the model will be used to answer real-life questions and make predictions
- ✓ Apply transformations to functions
- ✓ Factor polynomial functions from a graphical perspective and write equations of polynomials given a graph
- ✓ Find and interpret composition of functions and use the composition function to answer questions pertaining to real-life applications
- ✓ Find and interpret inverse functions
- ✓ Utilize proper notation to define and evaluate sequences and series
- ✓ Solve applications involving sequences and series
- ✓ Apply Pascal's Triangle and the Binomial Theorem
- ✓ Define and identify trigonometric functions
- ✓ Convert between radian measure and degrees
- ✓ Use radian measure to compute the length of an arc
- ✓ Find trigonometric values for particular angles in a right triangle
- ✓ Evaluate the sine and cosine functions for particular angles on the unit circle from memory
- ✓ Define sine and cosine functions based on the unit circle
- ✓ Graph, transform, and analyze the graphs of sine and cosine functions
- ✓ Rewrite tangent, secant, cosecant, and cotangent functions in terms of sine and cosine functions
- ✓ Use the trigonometric identities and inverse trigonometric functions appropriately to solve mathematical problems
- ✓ Verify trigonometric identities
- ✓ Use the laws of sine and cosine to solve mathematical problems
- ✓ Recognize, model, and solve applications using trigonometry
- ✓ Perform vector arithmetic
- ✓ Use vectors to model applications and solve mathematical problems
- ✓ Use parametric equations to describe curves
- ✓ Convert between Cartesian and polar coordinates

- ✓ Use polar equations to describe curves
- ✓ Recognize, and solve mathematical problems with polar equations
- ✓ Graph and translate graphs of conic sections (parabolas, ellipses, hyperbolas, and circles)
- ✓ Demonstrate an appropriate use of technology to solve problems

### Standards of Mathematical Practice:

The student will:

- ✓ Make sense of problems and persevere in solving them
- ✓ Reason abstractly and quantitatively
- ✓ Construct viable arguments and critique the reasoning of others
- ✓ Model with mathematics
- ✓ Use appropriate tools strategically
- ✓ Attend to precision
- ✓ Look for and make sense of structure
- ✓ Look for and express regularity in repeated reasoning.

*All math courses are designed to meet the requirements of the WLWV Mathematics Curriculum and the Common Core State Standards.*

### Grading:

A:	90 and above
B:	80.0-89.9
C:	70.0-79.9
D:	60.0-69.9
F:	59.9 and below

### Grading Breakdown:

Tests	40%
*Quizzes	15%
Final Exam	20%
My Open Math Hw	15%
Book Homework	10%

~College grades should be checked at the end of each semester through the student MyClackamas account information and then clicking of grades or unofficial transcript - <https://my.clackamas.edu/>

**\*Quiz Policy: Quizzes will be taken the day that they are scheduled, regardless of prior absences. If you miss a quiz on the scheduled day, you may not make it up and it will be given a "no grade" in the grade book. Students who take the quiz on the scheduled day have the option to replace their quiz score with their test score in the same unit if their score is better on the test than on the quiz.**

~ Late **book homework** will be accepted **on or before the chapter test day** for 100% credit and will not be accepted after the chapter test has been given.

**Homework:** Book Homework and My Open Math Homework is assigned on a daily basis. The My Open Math is due 8 am the following morning and is graded for accuracy. For the M.O.M homework you have 5 late passes for the semester. Book work is assigned daily, but is collected in packet-form every Friday by midnight. Book Homework is graded on a scale of 1 to 10 and will be graded on completion, effort, and demonstration of techniques rather than correctness. A pdf of book work assignments must be uploaded to the google classroom under the "assignment". Problems must show full work in order to earn full credit.

**Tests:** If a student misses the day of the test, the student will take the test the next day they are present in class. Other arrangements can be made by the student via email or in person with me, but must do so before the day of the test. (For example, if the test is on Monday and the student misses Monday's class. The student will take the test on Tuesday during class time.) There will be **NO TEST RETAKES**.

**Policies:** In order to have a successful and safe learning environment the following policies will be enforced:

- ✓ Act with kindness
  - Be respectful to each other, the teacher and to the things in the room. This includes putting cell phones away when entering the room and not taking them out until teacher allows.
  - Do not write or doodle on desks.
- ✓ Work together
  - This course emphasizes collaboration: class discussions, group work, and pair-sharing. There is a lot to be learned from your peers and having the opportunities to articulate, challenge, and defend ideas will strengthen every individual's mathematical understanding. We are all in this together, so let's work together.

*Because this class is a dual credit class, earning high school and college credit, you are held to student conduct policies for the high school and Clackamas Community College. Please refer to the HS Student Handbook and the College ACC and Student Handbooks at [www.clackamas.edu/acc](http://www.clackamas.edu/acc) and then open Student Resources for direct links to these handbooks.*

**Attendance:** Regular attendance is necessary for successful completion of the course for WLHS and ACC dual credit.

**Website:** If you miss class, please check the website calendar to see what you have missed. You should always check the class webpage before emailing the teacher to see what you missed.

**Additional Support:** Further academic support is offered through the academic center, appointments are not needed. If at any point you wish to get a private tutor your guidance counselor can provide you with a district approved list.

CCC Learning Center Access – If registered for the college credit, you have access to free tutoring and supports. [www.clackamas.edu/LearningCenter/](http://www.clackamas.edu/LearningCenter/)

**Supplies:** Students must come to class each day with the following items:

- ✓ Graphing calculator
- ✓ Pencils
- ✓ Notebook paper or Spiral Graphing notebook
- ✓ Pens and highlighters
- ✓ Textbook