West Linn–Wilsonville School District

Mathematics – Course Statement

Course Title: Pre-Calculus

Length of Course: Year
Number of Credits: 1
Grade Level: 10, 11, 12
Prerequisites: Advanced Algebra

Date of Description/Revision: 2013

Course Overview	

This course covers enumeration, logic, probability, statistics, matrices and graph theory. In addition, the student will be exposed to some beginning calculus topics: the concept of limits, the definition of the derivative and the definition of the integral. Applications are emphasized throughout the material to allow the student to more fully understand the relevance of the material to their life.

Essential Questions	Concepts providing focus for student learning

- What strategies and forms do we use in problem solving?
- What is a proof?
- What are the properties of functions and how do we use these properties to model and study the real world?
- What is the limit concept? How is it used to study the properties of functions?

Common Core Standards For Mathematical Practice	

Students will develop the following practices throughout the course:
- 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 make use of structure.
- Look for and express regularity in repeated reasoning.

Proficiency Statements	

Upon completion of course, students will be able to:
- Use a graphics calculator to investigate and solve various problems and ideas of functions such as optimization problems, including maximum-minimum problems.
- Describe the general properties of functions as they relate to calculus.
- Use the concept of a limit as it pertains to sequences and functions.
- Analyze the graphs of polynomial, rational, radical, and transcendental functions.
- Use the Pythagorean Theorem to develop and understand both circular and right triangle

trigonometry.	
General Course Topics/Units & Timeframes	
A. Linear and quadratic equations B. Polynomial functions C. Functions in general D. Exponents and logarithms E. Circular functions F. Triangle trigonometry G. Addition formulas	
Resources	
• Text: *Pre-Calculus: Mathematics for Calculus, Update Edition, 5th Edition*, Stewart, et. al., Brooks/Cole, 2010	