**Foundations of Mathematics 12**

**Course Syllabus1**

**Bonar Law Memorial School**

**C. Wilson**

**COURSE OUTCOMES**

**Unit 4: Relations and Functions (4 weeks)**

* RF1: Represent data, using polynomial functions (of degree < 3) to solve problems
* RF2: Represent data, using exponential and logarithmic functions, to solve problems
* RF3: Represent data, using sinusoidal functions, to solve problems

**Unit 1: Statistics (4 weeks)**

* S1: Demonstrate an understanding of normal distribution, including standard deviation and z-scores
* S2: Interpret statistical data, using confidence intervals, confidence levels, and margin of error.

**Unit 3: Probability (6 weeks)**

* P1: Interpret and assess the validity of odds and probability statements.
* P2: solve problems that involve the probability of mutually exclusive and non-mutually exclusive events
* P3: Solve problems that involve the probability of two events
* P4: Solve problems that involve the fundamental counting principle.
* P5: Solve problems that involve permutations
* P6: Solve problems that involve combinations.
* P7: Expand powers of a binomial in a variety of ways, including using the binomial theorem (restricted to exponents that are natural numbers)

**Unit 2: Logical Reasoning (1 week)**

* LR1: Analyze puzzles and games that involve numerical and logical reasoning, using problem-solving strategies.
* LR2: Solve problems that involve the application of set theory.
* LR3: Solve problems that involve conditional statements.

**EVALUATION**

* Exam 30%2
* Semester 70%
  + Tests and Quizzes 55%
  + Math Journal 15%
  + Homework, Assignments and Projects 30%3

**OUR Core Values**

* **Grit –**Work harder than you *think* you need to! Study.
* **Empathy –** Listen to others. Go out of your way to help someone with something you have also had trouble with.
* **Accountability –** Own your successes and failures. Arrange extra-help if you need it. Do your own work.
* **Respect –** Be on time and attend class regularly. Respect other students, the teacher and course materials.

1Notice will be given if syllabus changes

2Exam Incentive: If students miss 5 or fewer classes and are in good standing (no missing assignments or projects), then the exam will be worth 15%, 30% or 50%, whichever results in the greatest advantage for the student.

3Late Assignment Policy: For every date late, 10% will be deducted from the mark. If a student is absent on a due date, a written legitimate excuse from a parent or guardian must be presented upon the students’ return, or the late-date policy will apply. A students’ mark cannot be lower than a 60% given that the student deserves a passing grade. All work must be handed in NO LATER than one week after the given due date. Due dates will be clearly posted on the calendar in the classroom.

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| Unit | Outcomes | Achievement Indicators (students will…) | Assessment |
| Relations and Functions (4 weeks) | RF1- Represent data using polynomial functions (degree less than 3) to solve problems | -Describe orally and in written for, characteristics of polynomial functions by analyzing their graphs and equations  -Match equations to corresponding graphs  -Graph data and determine the polynomial function that approximates the data  -Interpret the graph of a polynomial function that models a situation and explain your reasoning  -Solve contextual problems that involve data that is best represented by graphs of polynomial functions | Quizzes (~2)  Unit Test  Assignments (~2)  Project? |
| RF2-Represent data using exponential and logarithmic functions, to solve problems | -Describe the characteristics of exponential or logarithmic functions by analyzing their graphs and equations  -Match graphs to corresponding equations  -Graph data and determine the exponential or logarithmic function that best approximates the data  -Interpret the graph of an exponential or logarithmic function that models a situation  -Solve a contextual problem that involves exponential or logarithmic functions |
| RF3-Represent data using sinusoidal functions to solve problems | -Describe the characteristics of sinusoidal functions by analyzing their graphs and equations  -Match graphs to corresponding equations  -Graph data and determine functions that best approximates the data  -Interpret the graph of an sinusoidal functions that models a situation  -Solve a contextual problem that involves sinusoidal functions |

Self-Assessment Rubric

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| --- | --- | --- | --- | --- | --- |
| Novice (1)  0-49% | Novice + (2)  50-59% | Apprentice (3)  60-69% | Apprentice + (4)  70%-79% | Expert- (5)  80-94% | Expert+ (6)  95-100% |
| I am only beginning to do this and most always need help, intervention from my teacher or my peers. Time for extra help. | I occasionally do this, but am still in learning stages. I usually need intervention or guidance from teacher or my peers. | I do this some of the time, but often need teacher assistance and/or guidance. Extra help is needed. | I do this appropriately MOST of the time, but sometimes I need assistance and/or guidance. | I do this satisfactorily MOST of the time, and I am very close to being a role model who could teach others. | I do this exceptionally well ALL the time. I am a role model to my peers and could effectively teach others. |