Math Secondary III - Course Outline

TERM 1

Unit 1 – Polynomials

- Disclosure – Polynomial Operations & Complex Number Operations
- Factoring Review – common factors, difference of squares, trinomials a=1 & a not 1, difference/sum of cubes
- Long Division & Synthetic Division
- Introduce polynomials – graph, identify, define, find degree, number of turning points, Fundamental Theorem of Algebra, Intermediate Value Theorem, Rational Zeros Theorem, etc.
- 2 days - Different forms of polynomials – Rational root theorem, find real zeros, multiplicity, turning points, intercepts, increasing/decreasing, maximum/minimum, etc.
- 2 days - Complex zeros
- 2 days - Polynomial Inequalities – solve graphically & algebraically
- Review
- ***Test***

Unit 2 – Rationals and Radical Expression

- Domain, Simplify Rationals
- Multiply/Divide Rationals
- Add/Subtract Rationals
- Simplify Complex Fractions
- Solve Simple Rational Equations (with needing common denominators)
- Solve Radical Equations
- Extra Day
- Review
- ***Test***

TERM 2

Unit 3 – Radical, Rational, and Other Functions

- Graphing Radicals
- Analyze and Interpret rational functions by only looking at graphs – include intercepts, increasing, decreasing, positive, negative, relative maximums/minimums, and end behavior, domain/range,
- Graph rational functions algebraically – find vertical, horizontal, and oblique asymptotes
- Extra day for graphing rationals
- Family of Functions – including square root, cube root, exponential, log, and absolute value

- Piecewise Functions
- (Extra Cushion Day)
- REVIEW
- **TEST**

Unit 4 – Solving Equations & Inequalities
- Days 1 & 2 – Word problems – including Area, work problems, distance/rate/time problems
- Days 3 & 4 - Solve Equations - Quadratics with u substitution, solve by grouping
- Solving inequalities – including word problems like maximizing area
- Solving multi-variable equations (formulas) for specific variables
- Review
- **Test**

TERM 3

Unit 5 - Logs
- Graphing Exponential/Logs and domain of logs
- Changing from Exponential /Logs form
- Day 3 & 4 - Evaluate logs, Common-Natural Logs, Basic Properties
- Day 5 & 6 - Properties of Logs
- Day 7 & 8 - Solve logs
- Day 9 & 10 - Exponential Growth and Decay
- Compound Interest
- Review
- **Test**

Unit 6 – Trigonometry

- 6 Trig Functions, Pythagorean Theorem & Special Right Triangles
- (2 days) - Radians & Unit Circle
- Solve Triangles (Inverses)
- Graph Basic Sin/Cos & do transformations
- (2 days) - Graph Period Shifts for Sin/Cos
- Graph simple Sec/Csc
- Law Sines
- Law of Cosines & Area Model
- Review
- **Test**

TERM 4

Unit 7 - Statistics

- Design a study
- Skewed/Not skewed & Normal Curve

- Probability Distribution & Expected Value
- Binomial Theorem
- (2 days) Normal Distribution
- (2 days) Confidence Intervals
- No TEST for this unit (just test questions added on to the final)

REVIEW for SAGE
SAGE Testing

2 REVIEW DAYS
FINAL EXAM