

# **Outcomes Checklist**

**Mathematics 3103**

Pilot Edition

**GCO A: Students will demonstrate number sense and apply number theory concepts.**

	<b>C</b>	<b>A</b>	<b>Comments</b>
A1 identify numbers as belonging to the various subsets of the real numbers and recognize situations in which each of these subsets can be applied..			
A2 write either a sentence or an inequality to describe the numerical restrictions (domain and range) in various problem situations.			
A3 apply fraction concepts both mentally and using pencil and paper algorithms. These concepts will include: <ul style="list-style-type: none"> <li>- LCD(lowest common denominator)</li> <li>- Equivalent Fractions</li> <li>- Reducing to simplest form</li> <li>- Improper vs Mixed fraction</li> <li>- Factors</li> <li>- Prime factorization to find LCD's</li> <li>- Ordering fractions by relative size</li> </ul>			
A4 develop place value and rounding concepts for decimal numbers.			
A5 convert numbers from : <ul style="list-style-type: none"> <li>- percent to decimal</li> <li>- percent to fraction</li> <li>- decimal to fraction</li> <li>- decimal to percent</li> <li>- fraction to decimal</li> <li>- fraction to percent</li> </ul>			

**GCO B: Students will demonstrate operation sense and apply operation principles and procedures in both numeric and algebraic situations**

	C	A	Comments
B1 add, subtract, multiply and divide fractions (both mentally and using pencil and paper), and work with patterns and graphs based on these operations with fractions.			
B2 simplify complex fractions containing rational numbers.			
B3 add, subtract, multiply and divide decimal numbers mentally.			
B4 solve simple equations involving percentages			
B5 apply percentage increase and decrease in problem solving situations			
B6 apply the order of operations with rational numbers, simple irrational numbers, and algebraic expressions			
B7 apply the Laws of Exponents for both integer and rational exponents.			
B8 relate rational exponents to radicals and use this relationship to simplify expressions			
B9 simplify expressions involving radicals			
B10 recognize and use the language of polynomials			
B11 identify, add, subtract, and multiply complex numbers			

B12	verify that complex numbers are the solutions of polynomial equations			
B13	add, subtract, multiply and divide rational expressions.			
B14	use the four basic operations to simplify complex fractions.			
B15	rearrange formulas to solve for any variable			
B16	simplify problem situations involving functions of two or more variables to functions of one variable			
B17	find the composite, $f(g(x))$ or $g(f(x))$ , and perform calculations involving the composite of two functions given in either algebraic or graphical form.			
B18	find the inverse of a linear or quadratic function and be able to verify whether that inverse is a function.			
B19	sketch the inverse graph by interchanging coordinates.			

**GCO C: Students will explore, recognize, and apply patterns and relationships, both formally and informally.**

C1	solve linear equations			
C2	factor polynomial expressions and use factoring to solve polynomial equations in one variable of degree 2 or higher			
C3	solve polynomial equations of degree 3 or 4 using the Rational Roots Theorem to identify a factor and then use Synthetic Division to obtain and solve a depressed equation.			
C4	recognize basic graphs of polynomial functions to degree 4			
C5	use graphs to obtain precise polynomial functions			
C6	solve equations involving radicals and determine extraneous roots			
C7	solve equations involving rational expressions and determine extraneous roots			