Mathematics Learning Support Curriculum

The mathematics curriculum sub-committee was tasked with developing a curriculum designed to prepare students to be successful in their first college level mathematics course. To satisfy federal guidelines for financial aid, alignment of curriculum with the Department of Education high school mathematics curriculum standards established a floor for the mathematics learning support curriculum. The mathematics sub-committee was directed to use the ACT college readiness standards and alignment with a mathematics ACT benchmark sub score of 22 as guidelines to set a ceiling for curriculum designated for learning support credit. Based on the statewide curriculum survey, comparisons' with ACT readiness standards as well as the committee members' teaching experience, the mathematics curriculum sub-committee recommends the following:

Primary Recommendations:

1) Mathematics curriculum should be defined and organized into competencies points for assessment, placement, and transferability.
2) In order to prepare students to enter into non-algebra intensive college-level math courses, the committee recommends that students demonstrate mastery of five competencies points prior to enrollment in any college level math course.
3) Additional curriculum is necessary to prepare students for algebra intensive courses and should be provided at the college level.

The students will

- **Develop study skills for success**
    - Understand students' learning styles.
    - Use the textbook, software and note taking to assist the learning process
    - Read and follow instructions.

- **Communicate mathematically** (with appropriate vocabulary)
    - Articulate the process of finding and interpreting the meaning of solutions.
    - Use symbols, diagrams, graphs and words to reason logically and form appropriate implications.

- **Be problem solvers**
    - Experiment with problem solving strategies.
    - Analyze and understand problems to be solved. Develop plans for solving and implement plans using logical reasoning and mathematical knowledge to form and justify solutions.

- **Develop mathematical connections**
    - Make connections between areas of mathematical concepts and the real world.

Mathematics Learning Support Competency Points for Banner

MLS 1	**Real Number Sense and Operations**	
MLS 2	**Operations with Algebraic Expressions**	
MLS 3	**Analyze Graphs**	
MLS 4	**Solve Equations**	
MLS 5	**Modeling and Critical Thinking**	

MLS 1	Real Number Sense and Operations
1.1	Apply the order of operations to evaluate expressions.
1.2	Perform operations with rational numbers
	Determine the other equivalent forms of the number when given a fraction, decimal number, or percent.
1.3	Identify and calculate with irrational numbers (no need to numerically simplify radical expressions)
1.4	Recognize and apply magnitude (absolute value) and ordering of real number.
1.5	Solve real-world application problems. Such as
	Solve problems involving percents.
	Determine the area and perimeter (or circumference) of a triangle, rectangle, and circle.
	Determine equivalent measure of length, weight or mass, volume, or time when given either customary or metric units of measurement.
	Write and compare numbers in standard and scientific notation.
	Applications with volume, and surface area

MLS 2	Operations with Algebraic Expressions (including polynomials)
2.1	Identify and simplify like terms
2.2	Evaluate algebraic expressions when given values for the variables.
2.3	Create a table of values from an expression.
2.4	Evaluate expressions involving powers and roots.
2.5	Use the distributive law to write equivalent expression.
2.6	Add, subtract and multiply polynomials.
2.7	Factor a polynomial using GCF only
2.8	Simplify an expression involving integer exponents using the rules for exponents.
2.9	Solve real-world application problems.

MLS 3	Analyze Graphs (emphasis on linear functions and graphs, including inequalities)
3.1	Create a table of values and a graph for a given relations (may not be linear)
3.2	Identify and interpret rate of change.
3.3	Use and interpret function notation particularly as it relates to graphic and tabular data.
3.4	Analyze the graph of a linear function identifying the x-intercepts, y-intercepts, and slope.
3.5	Graph a linear equation in two variables using ordered pairs, using the x-intercept and the y- intercept, and using the slope and the y-intercept.
3.6	Write a linear equation in two variables when given information about their graphs.
3.7	Graph linear inequalities in two variables.
3.8	Solve real-world application problems.

MLS 4	Solve Equations (emphasis on linear equations/inequalities)
4.1	Solve a linear equation in one variable using multiple approaches - numerical, graphical, and symbolic.
4.2	Solve a linear inequality in one variable and graph the solutions.
4.3	Solve formulas and literal equations for a specified variable.
4.4	Solve proportions that simplify to linear expressions.
4.5	Solve real-world application problems (including applications with volume, and surface area)

MLS 5	Modeling and Critical Thinking
5.1	Students integrate their mathematical development from MLS 1 through MLS 4 to make meaningful connections.
	Institutions should develop their own topics, suggested topics might include:
	*Solve a system of equations (may be non-linear) applying graphical methods, numeric methods, and algebraic methods (using substitution or elimination).
	*Probability, Statistics and Data Analysis.
	*Modeling with non linear functions.