Department: Mathematics  
Course Title: Finite Mathematics  
Course Code: 3150  
Grade Level: 9 – 12  
Short Title: FINITE MATH  
Grad Requirement: N/A

<table>
<thead>
<tr>
<th>Course Length</th>
<th>Credits per Semester</th>
<th>Approved for Honors</th>
<th>Required</th>
<th>Elective</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 semesters</td>
<td>5</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Prerequisites: C or better in Algebra 2 (or Intermediate Algebra)

Co-requisites: None

Articulated with LBCC: No
Articulated with CSULB: No

Meets UC “a-g” Requirement: Yes (c)
Meets NCAA Requirement: Yes

Teaching Credential(s): Teachers with any of these credentials are authorized to teach this course:
- Single Subject Credential in Mathematics (SS)

COURSE OVERVIEW:
This course is a one year program in applied mathematics. It is comparable to the Finite Mathematics courses taught at the college level. Topics include Linear Functions, Matrices, Linear Programming, Finance, Counting Techniques, Probability and Statistics. Concepts are introduced with concrete, real-life examples chosen from current topics and issues in the media. Special emphasis is placed on helping students formulate, solve, and interpret the results of applied problems.

EXPECTED OUTCOMES
Students are expected to perform at a proficient level on a variety of tasks and assessments addressing the Common Core Standards for Mathematical Practice and the Common Core State Standards addressed in Finite Mathematics. Levels of proficiency are defined near the end of this course outline under Performance Criteria.

Common Core State Standards for Mathematical Practice (SMP)
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Common Core State Standards for Mathematical Content (CCSS-M)
Number and Quantity

<table>
<thead>
<tr>
<th>Vector and Matrix Quantities</th>
<th>N-VM</th>
<th>N-VM.C</th>
<th>N-VM.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perform operations on matrices and use matrices in applications.</td>
<td>N-VM</td>
<td>(+) Use matrices to represent and manipulate data, e.g., to represent payoffs or incidence relationships in a network.</td>
<td></td>
</tr>
</tbody>
</table>
N-VM.7 (+) Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled.

N-VM.8 (+) Add, subtract, and multiply matrices of appropriate dimensions.

N-VM.9 (+) Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive properties.

N-VM.10 (+) Understand that the zero and identity matrices play a role in matrix addition and multiplication similar to the role of 0 and 1 in the real numbers. The determinant of a square matrix is nonzero if and only if the matrix has a multiplicative inverse.

Algebra

Creating Equations*

A-CED.A Create equations that describe numbers or relationships.

A-CED.1 Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.*

A-CED.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.*

A-CED.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.*

Reasoning with Equations and Inequalities

A-REI.B Solve equations and inequalities in one variable.

A-REI.3 Solve one-variable equations and inequalities graphing the solutions and interpreting them in context.

A-REI.C Solve systems of equations.

A-REI.6 Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.

A-REI.D Represent and solve equations and inequalities graphically.

A-REI.11 Explain why the x-coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.*

A-REI.12 Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.

Functions

Interpreting Functions

F-IF.B Interpret functions that arise in applications in terms of the context.

F-IF.4 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.*

F-IF.5 Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble $n$ engines in a factory, then the positive integers would be an appropriate domain for the function.*
Linear, Quadratic, and Exponential Models*  

F-LE.A Construct and compare linear, quadratic, and exponential models and solve problems.
F-LE.1 Distinguish between situations that can be modeled with linear functions and with exponential functions.*
   b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.*
   c. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.*

F-LE.2 Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).*

F-LE.3 Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.*

F-LE.B Interpret expressions for functions in terms of the situation they model.
F-LE.5 Interpret the parameters in a linear or exponential function in terms of a context.*

Statistics and Probability*

Interpreting Categorical and Quantitative Data  

S-ID.A Summarize, represent, and interpret data on a single count or measurement variable.
S-ID.2 Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.*
S-ID.3 Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).
S-ID.4 Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.

S-ID.B Summarize, represent, and interpret data on two categorical and quantitative variables.
S-ID.6 Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.
   a. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.
   c. Fit a linear function for a scatter plot that suggests a linear association.

S-ID.C Interpret linear models.
S-ID.7 Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.
S-ID.8 Compute (using technology) and interpret the correlation coefficient of a linear fit.
S-ID.9 Distinguish between correlation and causation.

Conditional Probability and the Rules of Probability  

S-CP.A Understand independence and conditional probability and use them to interpret data.
S-CP.1 Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events (“or,” “and,” “not”).
S-CP.2 Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.
S-CP.3 Understand the conditional probability of A given B as \( P(A \text{ and } B)/P(B) \), and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.
S-CP.4 Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.

S-CP.5 Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.

S-CP.B Use the rules of probability to compute probabilities of compound events in a uniform probability model.

S-CP.6 Find the conditional probability of A given B as the fraction of B’s outcomes that also belong to A, and interpret the answer in terms of the model. *

S-CP.7 Apply the Addition Rule, \( P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B) \), and interpret the answer in terms of the model.

S-CP.8 (+) Apply the general Multiplication Rule in a uniform probability model, \( P(A \text{ and } B) = P(A)P(B|A) = P(B)P(A|B) \), and interpret the answer in terms of the model.

S-CP.9 (+) Use permutations and combinations to compute probabilities of compound events and solve problems.

Using Probability to Make Decisions S-MD

S-MD.B Use probability to evaluate outcomes of decisions.

S-MD.6 (+) Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).

S-MD.7 (+) Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).

EXPECTED INTEGRATED OUTCOMES
(From the California Career Technical Education Model Curriculum Standards, adopted by the California State Board of Education in January, 2013)

Students are also expected to proficiently apply common skills that are relevant across curriculum areas and career pathways.

Standards for Career Ready Practice (CR)

1. Apply appropriate technical skills and academic knowledge.
Career-ready individuals readily access and use the knowledge and skills acquired through experience and education. They make connections between abstract concepts with real-world applications and recognize the value of academic preparation for solving problems, communicating with others, calculating measures, and performing other work-related practices.

2. Communicate clearly, effectively, and with reason.
Career-ready individuals communicate thoughts, ideas, and action plans with clarity, using written, verbal, electronic, and/or visual methods. They are skilled at interacting with others: they are active listeners who speak clearly and with purpose, and they are comfortable with terminology that is common to workplace environments. Career-ready individuals consider the audience for their communication and prepare accordingly to ensure the desired outcome.

3. Develop an education and career plan aligned with personal goals.
Career-ready individuals take personal ownership of their educational and career goals and manage their individual plan to attain these goals. They recognize the value of each step in the educational and experiential process, and they understand that nearly all career paths require ongoing education and experience to adapt to practices, procedures, and expectations of an ever-changing work environment. They seek counselors, mentors, and other experts to assist in the planning and execution of education and career plans.
4. **Apply technology to enhance productivity.**
Career-ready individuals find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring and using new technology. They understand the inherent risks - personal and organizational - of technology applications, and they take actions to prevent or mitigate these risks.

5. **Utilize critical thinking to make sense of problems and persevere in solving them.**
Career-ready individuals recognize problems in the workplace, understand the nature of the problems, and devise effective plans to solve the problems. They thoughtfully investigate the root cause of a problem prior to introducing solutions. They carefully consider options to solve a problem and, once agreed upon, follow through to ensure the problem is resolved.

6. **Practice personal health and understand financial literacy.**
Career-ready individuals understand the relationship between personal health and workplace performance. They contribute to their personal well-being through a healthy diet, regular exercise, and mental health activities. Career-ready individuals also understand that financial literacy leads to a secure future that enables career success.

7. **Act as a responsible citizen in the workplace and the community.**
Career-ready individuals understand the obligations and responsibilities of being a member of a community and demonstrate this understanding every day through their interactions with others. They are aware of the impacts of their decisions on others and the environment around them, and they think about the short-term and long-term consequences of their actions. They are reliable and consistent in going beyond minimum expectations and in participating in activities that serve the greater good.

8. **Model integrity, ethical leadership, and effective management.**
Career-ready individuals consistently act in ways that align with personal and community-held ideals and principles. They employ ethical behaviors and actions that positively influence others. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the direction and actions of a team or organization, and they recognize the short-term and long-term effects that management’s actions and attitudes can have on productivity, morale, and organizational culture.

9. **Work productively in teams while integrating cultural and global competence.**
Career-ready individuals contribute positively to every team, as both team leaders and team members. To avoid barriers to productive and positive interaction, they apply an awareness of cultural differences. They interact effectively and sensitively with all members of the team and find ways to increase the engagement and contribution of other members.

10. **Demonstrate creativity and innovation.**
Career-ready individuals recommend ideas that solve problems in new and different ways and contribute to the improvement of the organization. They consider unconventional ideas and suggestions by others as solutions to issues, tasks, or problems. They discern which ideas and suggestions may have the greatest value. They seek new methods, practices, and ideas from a variety of sources and apply those ideas to their own workplace practices.

11. **Employ valid and reliable research strategies.**
Career-ready individuals employ research practices to plan and carry out investigations, create solutions, and keep abreast of the most current findings related to workplace environments and practices. They use a reliable research process to search for new information and confirm the validity of sources when considering the use and adoption of external information or practices.

12. **Understand the environmental, social, and economic impacts of decisions.**
Career-ready individuals understand the interrelated nature of their actions and regularly make decisions that positively impact other people, organizations, the workplace, and the environment. They are aware of and
utilize new technologies, understandings, procedures, and materials and adhere to regulations affecting the nature of their work. They are cognizant of impacts on the social condition, environment, workplace, and profitability of the organization.

**COURSE CONTENT AND SUGGESTED TIME ALLOTMENT:**
Content sequencing, activities, and time allocations are only suggestions and may be adjusted to suit school site curriculum plans, available materials, and student needs.

<table>
<thead>
<tr>
<th>Unit 1: Straight Lines and Linear Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration:</strong> 15 days</td>
</tr>
<tr>
<td><strong>Description:</strong> Students use the Cartesian coordinate system to compute the distance between two points, and use linear functions to describe relationships between two quantities. Practical problems in the fields of business, economics, the social sciences, physics and medicine are solved by finding the point(s) of intersection of two straight lines. Finally, students learn how to find a line of best fit for a set of data points.</td>
</tr>
<tr>
<td><strong>Required Assignment:</strong> Devising a Measure: Correlation</td>
</tr>
</tbody>
</table>

This lesson assesses how well students are able to understand the notion of positive correlation. In particular, this unit aims to identify and help students who have difficulty in 1) understanding correlation as the degree of fit between two variables, 2) making a mathematical model of a situation, 3) testing and improving the model, 4) communicating their reasoning clearly, and 5) evaluating alternative models of the situation. Before the lesson, students work individually on an assessment task designed to reveal their current understanding and difficulties. The teacher then reviews their work and creates questions for students to answer in order to improve their methods. At the start of the lesson, students work alone answering the questions, then work collaboratively in small groups to produce, in the form of a poster, a better solution to the task than they did individually. In a whole-class discussion students compare and evaluate the different methods they have used. Then, working in the same small groups, students analyze sample responses to the task. In a whole-class discussion students explain and compare the alternative methods. In a follow-up lesson, students review what they have learned.

**Materials:** Cengage *Finite Mathematics* text: Chapter 1


<table>
<thead>
<tr>
<th>Unit 2: Systems of Linear Equations and Matrices</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration:</strong> 28 days</td>
</tr>
<tr>
<td><strong>Description:</strong> Students apply what they learned about linear equations to situations that have more than two variables. Real-world problems can be formulated in terms of systems of linear equations, and students learn two methods for solving these equations. Also, matrices are used to write systems of linear equations in a more compact form. Students use matrices to solve real-world problems.</td>
</tr>
<tr>
<td><strong>Required Assignment:</strong> Solving Linear Equations in Two Variables</td>
</tr>
</tbody>
</table>

This lesson assesses how well students are able formulate and solve problems using algebra and in particular, to identify and help students who have difficulty solving a problem using two linear equations with two
variables, and interpreting the meaning of algebraic expressions. Before the lesson, students work individually on the *Notebooks and Pens* task. The teacher then reviews their work and creates questions for students to answer in order to improve their solutions. During the lesson, students work alone on a new task involving interpreting and solving two equations in two variables. They discuss their solutions in small groups before producing a joint solution. In the same small groups students evaluate some sample solutions to the task. In a whole-class discussion, students explain and compare the alternative solution strategies they have seen and used. Finally, in a follow-up lesson, students use what they have learned to revise their work on *Notebooks and Pens*.

**Materials:** Cengage *Finite Mathematics* text: Chapter 2


### Unit 3: Linear Programming: A Geometric Approach

**Duration:** 22 days

**Description:**
Students work with linear programming problems involving two variables. Students maximize or minimize functions subject to certain constraints. Real world examples are emphasized, such as maximizing a profit function subject to certain limitations on the amount of material and labor available.

**Required Assignment:**
**Maximizing Profits: Selling Boomerangs**

This lesson is intended to assess how well students are able to 1) interpret a situation and represent the constraints and variables mathematically, 2) select appropriate mathematical methods to use, 3) explore the effects of systematically varying the constraints, 4) interpret and evaluate generated data and identify the optimum case, check it for confirmation, and 5) communicate their reasoning clearly. This lesson is designed to help students develop strategies for solving optimization problems. Such problems typically involve using limited resources to greatest effect, as in, for example, the allocation of time and materials to maximize profit. Before the lesson, students attempt the problem individually. You then review their work and formulate questions for students to answer in order to improve their solutions. At the start of the lesson, students work alone answering your questions. Students are then grouped and engage in a collaborative discussion of the same task. In the same small groups, students are given sample solutions to comment on and evaluate. In a whole-class discussion, students explain and compare solution strategies seen and used. Finally, students revise their individual solutions and comment on what they have learned.

**Materials:** Cengage *Finite Mathematics* text: Chapter 3


### Unit 4: Linear Programming: An Algebraic Approach

**Duration:** 20 days

**Description:**
Students use an algebraic approach to solve linear programming problems involving more than two variables. Students use the simplex method for solving standard maximization problems. The methods is also applied to solve a restricted class of standard minimization problems, and then nonstandard problems.
Unit 5: Mathematics of Finance

Duration: 21 days

Description:
Students derive the compound interest formula, and then use it to find the amount of money accumulated within an initial amount of money invested in an account for a fixed term and earns compound interest. Students also derive formulas giving the future value of an annuity, and the present value of an annuity. They use these formulas to solve problems involving the amortization of certain types of installment loans and sinking funds.

Required Assignment:
Representing Linear and Exponential Growth
This lesson assesses how well students are able to interpret exponential and linear functions and in particular, to identify and help students who have the difficulty translating between descriptive, algebraic, tabular, and graphical representation of the functions, and recognizing how and why a quantity changes per unit interval. Before the lesson, students work individually on an assessment task designed to reveal their current understanding and difficulties working with linear and exponential functions. The teacher reviews their responses and creates questions for students to consider, to help them improve their work. After a whole-class interactive introduction, students work in small groups on a series of collaborative card matching tasks involving simple and compound interest. In a whole-class discussion, students review the main mathematical concepts of the lesson and the strategies used. Students then return to the original task, consider their own responses and the questions posed and use what they have learned to complete a similar task.

Materials: Cengage Finite Mathematics text: Chapter 5
Standards Addressed: CCSS-M Clusters F-LE.A, F-LE.B

Unit 6: Sets and Counting

Duration: 21 days

Description:
Students learn how to combine sets algebraically to yield other sets. Students also learn techniques to determine the number of ways in which the elements of a set can be arranged or combined. These techniques will be used to solve many practical problems.

Materials: Cengage Finite Mathematics text: Chapter 6
Standards Addressed: CCSS-M Clusters S-CP.A, S-CP.B, S-MD.B
Unit 7: Probability

Duration: 21 days

Description:
Students learn basic terminology related to the study of probability, and then learn techniques for computing the probabilities of the occurrence of events.

Required Assignment:
Representing Probabilities: Medical Testing
This lesson assesses how well students are able to 1) make sense of a real life situation and decide what math to apply to the problem, 2) understand and calculate the conditional probability of an event A, given an event B, and interpret the answer in terms of a model, 3) represent events as a subset of a sample space using tables, tree diagrams, and Venn diagrams, and 4) interpret the results and communicate their reasoning clearly. Before the lesson, students work individually on an assessment task designed to reveal their current levels of understanding and difficulties. The teacher then reviews their work and creates questions for students to answer to help them improve their solutions. At the start of the lesson, students work alone answering the questions about the same problem. They are then grouped and engage in a collaborative discussion of the same task. In the same small groups, students are given sample solutions to comment on and evaluate. In a whole-class discussion, students explain and compare the alternative solution strategies they have seen and used. In a follow-up lesson, students review what they have learned.

Materials: Cengage Finite Mathematics text: Chapter 7

Standards Addressed: CCSS-M Clusters S-CP.A, S-CP.B, S-MD.B

Unit 8: Probability Distributions and Statistics

Duration: 21 days

Description:
Students study descriptive statistics, learning how to describe and present data in the form of tables and graphs. Then students study inductive statistics, and use the tools developed in the study of probability to draw conclusions and make forecasts.

Required Assignment:
Representing Conditional Probabilities 1
This lesson assesses how well students are able to understand conditional probability, represent events as a subset of a sample space using tables and tree diagrams, and communicate their reasoning clearly. Before the lesson, students work individually on an assessment task that is designed to reveal their current understanding and difficulties. The teacher then reviews their work and creates questions for students to answer in order to improve their solutions. At the start of the lesson, students work alone answering the questions about the same problem. Students are then grouped and engage in a collaborative discussion of the same task. In the same small groups, students are given sample solutions to analyze and evaluate. Finally, in a whole-class discussion, students explain and compare the alternative solution strategies they have seen and used. In a follow-up lesson students review what they have learned.

Materials: Cengage Finite Mathematics text: Chapter 8

Standards Addressed: CCSS-M Clusters S-ID.A, S-CP.A, S-CP.B, S-MD.B
INSTRUCTIONAL METHOD AND/OR STRATEGIES:
A variety of instructional strategies will be utilized to accommodate all learning styles. See the “Using Formative Assessment to Address the Specific Learning Needs of Low Achieving Students, High Achieving Students, Students with Disabilities and English Language Learners in K-12 MATHEMATICS” document.

COURSE MATERIALS:
Supplemental Materials: In addition to the basic text, a variety of instructional tools will be used to meet the needs of all students.

RESOURCES:

Documents
- LBUSD Scope and Sequence ................................................................. LBUSD Mathematics Webpage
- LBUSD Unit Guides ............................................................................. LBUSD Mathematics Webpage
- LBUSD Instructional Tools ............................................................... LBUSD Mathematics Curriculum Intranet
- Using Formative Assessment for Differentiation ...................... LBUSD Math/ELA Curriculum Documents
- Work-Based Learning Continuum ............................................... LBUSD Work-Based Learning Webpage
- ELD Standards ..................................................................................... http://www.cde.ca.gov/sp/el/er/eldstandards.asp

District Offices
- Math Curriculum Office ...........................................................................(562) 997-8000, ext. 2962
- Research Office ......................................................................................(562) 997-8143

PERFORMANCE CRITERIA:
Defines how good is good enough on which measures to demonstrate achievement of content standards.

Classroom Performance Standards
The objective of instruction is to help all students achieve at or above the Proficient Level and receive a C or better in the course.

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>D</th>
<th>C</th>
<th>B</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessments</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Unit Tests</td>
<td>0 – 59%</td>
<td>60 – 69%</td>
<td>70 – 79%</td>
<td>80 – 89%</td>
<td>90 – 100%</td>
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<tr>
<td>Chapter Tests</td>
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<tr>
<td>Quizzes</td>
<td></td>
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</tr>
<tr>
<td>Classwork</td>
<td>0 – 59%</td>
<td>60 – 69%</td>
<td>70 – 79%</td>
<td>80 – 89%</td>
<td>90 – 100%</td>
</tr>
<tr>
<td>Homework</td>
<td>0 – 59%</td>
<td>60 – 69%</td>
<td>70 – 79%</td>
<td>80 – 89%</td>
<td>90 – 100%</td>
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</tbody>
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Standard Grading Scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90 – 100%</td>
</tr>
<tr>
<td>B</td>
<td>80 – 89%</td>
</tr>
<tr>
<td>C</td>
<td>70 – 79%</td>
</tr>
<tr>
<td>D</td>
<td>60 – 69%</td>
</tr>
<tr>
<td>F</td>
<td>0 – 59%</td>
</tr>
</tbody>
</table>
**Suggested Grade Weighting:**

<table>
<thead>
<tr>
<th>1. Assessment</th>
<th>60 – 80%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graded work assessing a student’s mastery of mathematics such as any of the following:</td>
<td></td>
</tr>
<tr>
<td>o Tests (district exams and classroom tests)</td>
<td></td>
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<tr>
<td>o Quizzes</td>
<td></td>
</tr>
<tr>
<td>o Project work that assesses a student’s understanding</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Classwork/Activities</th>
<th>10 – 25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graded work completed in class such as any of the following:</td>
<td></td>
</tr>
<tr>
<td>o In class assignments</td>
<td></td>
</tr>
<tr>
<td>o Project work completed in class</td>
<td></td>
</tr>
<tr>
<td>o Notes</td>
<td></td>
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<tr>
<td>o Warm-ups</td>
<td></td>
</tr>
<tr>
<td>o Graded participation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Homework</th>
<th>5 – 15%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graded work completed outside of class such as any of the following:</td>
<td></td>
</tr>
<tr>
<td>o Assignments</td>
<td></td>
</tr>
<tr>
<td>o Project work completed outside of class</td>
<td></td>
</tr>
</tbody>
</table>

Submitted by: Becky Afghani  
Submission Date: August 24, 2015  
School/Office: Math Curriculum Office  
Original Board Approval Date: November 3, 2015  
Revised Board Approval Date: