

**Mathematic Standards Matrix**  
**ENGINEERING SCIENCES**  
**September 29, 2009**

<b>ENGINEERING SCIENCES Standards/Measurement Criteria</b>		<b>MATH STANDARDS</b>
		Strand #, Concept #, Grade Level Performance Objective # ( <i>College Work Readiness Level Standards are italicized</i> )
<b>STANDARD 1.0 – DEVELOP AN UNDERSTANDING OF ENGINEERING PROBLEM SOLVING AND DESIGN PRACTICES</b>		
1.1	Identify the steps of the scientific process	See Note
1.2	Differentiate between the use of the scientific method by scientists to validate theories and by engineers to solve problems	See Note
1.3	Define the role of iteration in engineering practices	<b>Strand 5: Structure and Logic, Concept 1: Algorithms and Algorithmic Thinking, <i>College Work Readiness Level</i></b> <i>PO 1: Use a variety of approaches (inductive and deductive reasoning, estimations, generalizations, formal and informal methods of proof) to analyze algorithms.</i>
1.4	Define the role of alternative design in engineering practices	See Note
1.5	Explain how engineering includes the application of many fields of study to the problem solving process	See Note
<b>STANDARD 2.0 – APPLY CONCEPTS OF ENGINEERING PROBLEM SOLVING AND DESIGN PRACTICES</b>		
2.1	Apply a structured approach to solving problems including: defining a problem (including customer needs), brainstorming, researching and generating ideas, identifying criteria and constraints, exploring possibilities, making a model (physical, mathematical, conceptual), evaluating the solution using standards and specifications (e.g. testing), and communicating results	<b>Strand 1: Number and Operations, Concept 3: Estimation, <i>College Work Readiness Level</i></b> <i>PO 1: Recognize the limitations of estimations by assessing the amount of error resulting from estimation and determining whether the error is within acceptable tolerance limits.</i> <b>Strand 2: Data Analysis, Probability, and Discreet Mathematics, Concept 1: Data Analysis (Statistics), <i>College Work Readiness Level</i></b> <i>PO 8: Draw a line of best fit for a scatterplot with or without technology, describe how the correlation coefficient relates to fit, and explain when it is appropriate to use the regression equation to make predictions.</i> <b>Strand 3: Patterns, Algebra, and Functions, Concept 2: Functions and Relationships, <i>College Work Readiness Level</i></b> <i>PO 1: Express and solve problems that can be modeled using linear, quadratic, logarithmic, exponential, cubic, reciprocal, absolute value, and step and other piecewise-defined functions; interpret their solutions in terms of the context.</i> <b>Strand 3: Patterns, Algebra, and Functions, Concept 3: Algebraic Representations, <i>College Work Readiness Level</i></b> <i>PO 8: Describe the relationships among the solutions of an equation, the zeros of a function, the x-intercepts of a graph, and the factors of a polynomial expression with and without technology.</i>

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		<p><b>Strand 3: Patterns, Algebra, and Functions, Concept 4: Analysis of Change, College Work Readiness Level</b>  <i>PO 1: Analyze and describe how a change in an independent variable leads to a change in a dependent variable.</i>  <i>PO 2: Identify patterns in a function’s rate of change, including intervals of increase, decrease, and constancy; if possible, relate them to the function’s verbal description or its graph.</i>  <i>PO 3: Analyze change in various contexts by modeling and solving word problems using functions and equations.</i></p> <p><b>Strand 4: Geometry and Measurement, Concept 1: Geometric Properties, College Work Readiness Level</b>  <i>PO 1: Perform basic geometric constructions using a variety of methods, including</i></p> <ul style="list-style-type: none"> <li>• <i>perpendicular bisector of a line segment,</i></li> <li>• <i>bisector of an angle, and</i></li> </ul> <p><i>PO 2: Solve problems by formulating one or more strategies, applying the strategies, verifying the solution(s), and communicating the reasoning used to obtain the solution(s).</i>  <i>PO 3: Evaluate a solution for reasonableness and interpret the meaning of the solution in the context of the original problem.</i></p> <ul style="list-style-type: none"> <li>• <i>perpendicular or parallel lines.</i></li> </ul> <p><b>Strand 4: Geometry and Measurement, Concept 1: Geometric Properties, High School Level</b>  <i>PO 10: Solve problems using right triangles, including special triangles.</i>  <i>PO 11: Solve problems using the sine, cosine, and tangent ratios of the acute angles of a right triangle.</i></p> <p><b>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, College Work Readiness Level</b>  <i>PO 6: Synthesize mathematical information from multiple sources to draw a conclusion, make inferences based on mathematical information, evaluate the conclusions of others, analyze a mathematical argument, and recognize flaws or gaps in reasoning.</i>  <i>PO 7: Analyze and explain the general properties and behavior of functions or relations using algebraic and graphing techniques.</i>  <i>PO 8: Use inductive and deductive reasoning to make, analyze, and validate or refute conjectures and/or proofs.</i></p>
2.2	Define test driven design and implementation	See Note
2.3	Troubleshoot as a way of finding out why something does not perform to standards	<p><b>Strand 5: Structure and Logic, Concept 1: Algorithms and Algorithmic Thinking, College Work Readiness Level</b>  <i>PO 1: Use a variety of approaches (inductive and deductive reasoning, estimations, generalizations, formal and informal methods of proof) to analyze algorithms.</i></p> <p><b>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, College Work Readiness Level</b>  <i>PO 1: Analyze a problem situation, determine the question(s) to be answered, organize given information, determine how to represent the problem, and identify implicit and explicit assumptions that have been made.</i>  <i>PO 3: Evaluate a solution for reasonableness and interpret the meaning of the solution in the context of the original problem.</i>  <i>PO 8: Use inductive and deductive reasoning to make, analyze, and validate or refute conjectures and/or proofs.</i></p>

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2.4	Break down systems into their component parts and analyze their relationships and interdependencies	See Note
2.5	Examine the relationships between design criteria and such constraints as cost, time, quality, manufacturability, testability, maintainability, human factors, and environmental factors.	<p><b>Strand 2: Data Analysis, Probability, and Discrete Mathematics, Concept 1: Data Analysis (Statistics), High School Level</b>            PO 1: Draw inferences about data sets from lists, tables, matrices, and plots.            PO 2: Organize collected data into an appropriate graphical representation with or without technology.            PO 3: Display data, including paired data, as lists, tables, matrices, and plots with or without technology; make predictions and observations about patterns or departures from patterns.</p> <p><b>Strand 2: Data Analysis, Probability, and Discrete Mathematics, Concept 1: Data Analysis (Statistics), College Work Readiness Level</b>  <i>PO 9: Use matrices to organize and represent data.</i></p>
2.6	Develop and implement a plan for a project (e.g. time, materials, resources, steps)	See Note
<b>STANDARD 3.0 –APPLY FUNDAMENTAL SCIENTIFIC LAWS AND PRINCIPLES RELEVANT TO ENGINEERING AND TECHNOLOGY</b>		
3.1	Use the relationships among energy, work, and power to solve a variety of problems involving mechanical, fluid, electrical, and thermal systems	<p><b>Strand 1: Number and Operations, Concept 2: Numerical Operations, High School Level</b>            PO 1: Solve word problems involving absolute value, powers, roots, and scientific notation.            PO 4: Compute using scientific notation.</p> <p><b>Strand 2: Data Analysis, Probability, and Discrete Mathematics, Concept 1: Data Analysis (Statistics), College Work Readiness Level</b>  <i>PO 8: Draw a line of best fit for a scatterplot with or without technology, describe how the correlation coefficient relates to fit, and explain when it is appropriate to use the regression equation to make predictions.</i></p> <p><b>Strand 3: Patterns, Algebra, and Functions, Concept 2: Functions and Relationships, High School Level</b>            PO 5: Recognize and solve problems that can be modeled using a system of two equations in two variables.            PO 6: Recognize and solve problems that can be modeled using a quadratic function.            PO 7: Determine domain and range of a function from an equation, graph, table, description, or set of ordered pairs.</p> <p><b>Strand 3: Patterns, Algebra, and Functions, Concept 2: Functions and Relationships, College Work Readiness Level</b>  <i>PO 1: Express and solve problems that can be modeled using linear, quadratic, logarithmic, exponential, cubic, reciprocal, absolute value, and step and other piecewise-defined functions; interpret their solutions in terms of the context.</i></p> <p><b>Strand 3: Patterns, Algebra, and Functions, Concept 3: Algebraic Representations, High School Level</b>            PO 1: Create and explain the need for equivalent forms of an equation or expression.            PO 2: Solve formulas for specified variables.            PO 3: Write an equation given a table of values, two points on the line, the slope and a point on the line, or the graph of the line.</p>

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		<p>PO 7: Solve systems of two linear equations in two variables. PO 13: Solve quadratic equations.</p> <p><b>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, High School Level</b> PO 1: Analyze a problem situation, determine the question(s) to be answered, organize given information, determine how to represent the problem, and identify implicit and explicit assumptions that have been made. PO 2: Solve problems by formulating one or more strategies, applying the strategies, verifying the solution(s), and communicating the reasoning used to obtain the solution(s). PO 3: Evaluate a solution for reasonableness and interpret the meaning of the solution in the context of the original problem.</p> <p><b>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, College Work Readiness Level</b> <i>PO 1: Analyze a problem situation, determine the question(s) to be answered, organize given information, determine how to represent the problem, and identify implicit and explicit assumptions that have been made.</i> <i>PO 2: Solve problems by formulating one or more strategies, applying the strategies, verifying the solution(s), and communicating the reasoning used to obtain the solution(s).</i> <i>PO 3: Evaluate a solution for reasonableness and interpret the meaning of the solution in the context of the original problem.</i></p>
3.2	Use Newton's Laws of motion to analyze static and dynamic systems with and without the presence of external forces.	<p><b>Strand 1: Number and Operations, Concept 2: Numerical Operations, High School Level</b> PO 1: Solve word problems involving absolute value, powers, roots, and scientific notation. PO 4: Compute using scientific notation.</p> <p><b>Strand 2: Data Analysis, Probability, and Discreet Mathematics, Concept 1: Data Analysis (Statistics), College Work Readiness Level</b> <i>PO 8: Draw a line of best fit for a scatterplot with or without technology, describe how the correlation coefficient relates to fit, and explain when it is appropriate to use the regression equation to make predictions.</i></p> <p><b>Strand 3: Patterns, Algebra, and Functions, Concept 3: Algebraic Representations, High School Level</b> PO 1: Create and explain the need for equivalent forms of an equation or expression. PO 2: Solve formulas for specified variables. PO 3: Write an equation given a table of values, two points on the line, the slope and a point on the line, or the graph of the line. PO 7: Solve systems of two linear equations in two variables. PO 13: Solve quadratic equations.</p> <p><b>Strand 3: Patterns, Algebra, and Functions, Concept 2: Functions and Relationships, High School Level</b> PO 5: Recognize and solve problems that can be modeled using a system of two equations in two variables. PO 6: Recognize and solve problems that can be modeled using a quadratic function. PO 7: Determine domain and range of a function from an equation, graph, table, description, or set of ordered pairs.</p> <p><b>Strand 3: Patterns, Algebra, and Functions, Concept 2: Functions and Relationships, College Work Readiness Level</b> <i>PO 1: Express and solve problems that can be modeled using linear, quadratic, logarithmic, exponential, cubic, reciprocal,</i></p>

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		<p><i>absolute value, and step and other piecewise-defined functions; interpret their solutions in terms of the context.</i></p> <p><b>Strand 4: Geometry and Measurement, Concept 1: Geometric Properties, High School Level</b>          PO 11: Solve problems using the sine, cosine, and tangent ratios of the acute angles of a right triangle.</p> <p><b>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, High School Level</b>          PO 1: Analyze a problem situation, determine the question(s) to be answered, organize given information, determine how to represent the problem, and identify implicit and explicit assumptions that have been made.          PO 2: Solve problems by formulating one or more strategies, applying the strategies, verifying the solution(s), and communicating the reasoning used to obtain the solution(s).          PO 3: Evaluate a solution for reasonableness and interpret the meaning of the solution in the context of the original problem.</p> <p><b>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, College Work Readiness Level</b>  <i>PO 1: Analyze a problem situation, determine the question(s) to be answered, organize given information, determine how to represent the problem, and identify implicit and explicit assumptions that have been made.</i>  <i>PO 2: Solve problems by formulating one or more strategies, applying the strategies, verifying the solution(s), and communicating the reasoning used to obtain the solution(s).</i>  <i>PO 3: Evaluate a solution for reasonableness and interpret the meaning of the solution in the context of the original problem.</i></p>
3.3	Use the laws of conservation of energy, charge, and momentum to solve a variety of problems involving mechanical, fluid, chemical (atomic), nuclear, biological, electrical, and thermal systems.	<p><b>Strand 1: Number and Operations, Concept 2: Numerical Operations, High School Level</b>          PO 1: Solve word problems involving absolute value, powers, roots, and scientific notation.          PO 4: Compute using scientific notation.</p> <p><b>Strand 2: Data Analysis, Probability, and Discreet Mathematics, Concept 1: Data Analysis (Statistics), College Work Readiness Level</b>  <i>PO 8: Draw a line of best fit for a scatterplot with or without technology, describe how the correlation coefficient relates to fit, and explain when it is appropriate to use the regression equation to make predictions.</i></p> <p><b>Strand 3: Patterns, Algebra, and Functions, Concept 2: Functions and Relationships, High School Level</b>          PO 5: Recognize and solve problems that can be modeled using a system of two equations in two variables.          PO 6: Recognize and solve problems that can be modeled using a quadratic function.          PO 7: Determine domain and range of a function from an equation, graph, table, description, or set of ordered pairs.</p> <p><b>Strand 3: Patterns, Algebra, and Functions, Concept 3: Algebraic Representations, High School Level</b>          PO 1: Create and explain the need for equivalent forms of an equation or expression.          PO 2: Solve formulas for specified variables.          PO 3: Write an equation given a table of values, two points on the line, the slope and a point on the line, or the graph of the line.          PO 7: Solve systems of two linear equations in two variables.          PO 13: Solve quadratic equations.</p> <p><b>Strand 3: Patterns, Algebra, and Functions, Concept 2: Functions and Relationships, College Work Readiness Level</b></p>

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		<p><i>PO 1: Express and solve problems that can be modeled using linear, quadratic, logarithmic, exponential, cubic, reciprocal, absolute value, and step and other piecewise-defined functions; interpret their solutions in terms of the context.</i></p> <p><b>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, High School Level</b>          PO 1: Analyze a problem situation, determine the question(s) to be answered, organize given information, determine how to represent the problem, and identify implicit and explicit assumptions that have been made.          PO 2: Solve problems by formulating one or more strategies, applying the strategies, verifying the solution(s), and communicating the reasoning used to obtain the solution(s).          PO 3: Evaluate a solution for reasonableness and interpret the meaning of the solution in the context of the original problem.</p> <p><b>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, College Work Readiness Level</b>  <i>PO 1: Analyze a problem situation, determine the question(s) to be answered, organize given information, determine how to represent the problem, and identify implicit and explicit assumptions that have been made.</i>  <i>PO 2: Solve problems by formulating one or more strategies, applying the strategies, verifying the solution(s), and communicating the reasoning used to obtain the solution(s).</i>  <i>PO 3: Evaluate a solution for reasonableness and interpret the meaning of the solution in the context of the original problem.</i></p>
3.4	Identify relevant chemical, environmental, mechanical (tension, compression, torque), electrical, and physical properties of materials used in engineering projects.	See Note
3.5	Describe the relations between amplitude, wavelength, frequency, period, and speed of a wave for mechanical and electromagnetic oscillations.	<p><b>Strand 4: Geometry and Measurement, Concept 2: Transformation of Shapes, College Work Readiness Level</b>  <i>PO 3: Describe how changing the parameters of a trigonometric function affects the shape and position of its graph (<math>f(x) = A \sin B(x-C)+D</math> or the other trigonometric functions).</i></p>
<b>STANDARD 4.0 – APPLY MATHEMATICAL LAWS AND PRINCIPLES RELEVANT TO ENGINEERING AND TECHNOLOGY</b>		
4.1	Apply appropriate data collection and analysis methods to display data (graphs, tables, formulas, and words)	<p><b>Strand 2: Data Analysis, Probability, and Discrete Mathematics, Concept 1: Data Analysis (Statistics), High School Level</b>          PO 2: Organize collected data into an appropriate graphical representation with or without technology.          PO 3: Display data, including paired data, as lists, tables, matrices, and plots with or without technology; make predictions and observations about patterns or departures from patterns.          PO 5: Determine which measure of center is most appropriate in a given situation and explain why.</p>

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		<p>PO 7: Identify misrepresentations and distortions in displays of data and explain why they are misrepresentations or distortions.</p> <p>PO 8: Design simple experiments or investigations and collect data to answer questions.</p> <p><b>Strand 2: Data Analysis, Probability, and Discrete Mathematics, Concept 1: Data Analysis (Statistics), College Work Readiness Level</b></p> <p><i>PO 4: Explain how sampling methods, bias, and the phrasing of questions asked during data collections impact the conclusions that can be drawn.</i></p> <p><i>PO 5: Identify misleading uses of data and explain why they are misleading.</i></p>
4.2	Apply concepts of statistics to help make decisions	<p><b>Strand 2: Data Analysis, Probability, and Discrete Mathematics, Concept 1: Data Analysis (Statistics), High School Level</b></p> <p>PO 1: Draw inferences about data sets from lists, tables, matrices, and plots.</p> <p>PO 4: Make inferences by comparing data sets using one or more summary statistics.</p> <p>PO 5: Determine which measure of center is most appropriate in a given situation and explain why.</p> <p>PO 6: Evaluate the reasonableness of conclusions drawn from data analysis.</p> <p><b>Strand 2: Data Analysis, Probability, and Discrete Mathematics, Concept 1: Data Analysis (Statistics), College Work Readiness Level</b></p> <p><i>PO 2: Compare data sets using graphs and summary statistics, including variance and standard deviation, with or without technology.</i></p> <p><i>PO 3: Compute and explain summary statistics for distributions of data including measures of center and spread, including variance and standard deviation.</i></p> <p><i>PO 5: Identify misleading uses of data and explain why they are misleading.</i></p> <p><b>Strand 3: Patterns, Algebra, and Functions, Concept 2: Functions and Relationships, College Work Readiness Level</b></p> <p><i>PO 1: Express and solve problems that can be modeled using linear, quadratic, logarithmic, exponential, cubic, reciprocal, absolute value, and step and other piecewise-defined functions; interpret their solutions in terms of the context.</i></p>
4.3	Use algebraic, geometric and trigonometric relationships, characteristics, and properties to solve engineering problems	<p><b>Strand 1: Number and Operations, Concept 2: Numerical Operations, High School Level</b></p> <p>PO 1: Solve word problems involving absolute value, powers, roots, and scientific notation.</p> <p>PO 4: Compute using scientific notation.</p> <p><b>Strand 2: Data Analysis, Probability, and Discrete Mathematics, Concept 1: Data Analysis (Statistics), College Work Readiness Level</b></p> <p><i>PO 8: Draw a line of best fit for a scatterplot with or without technology, describe how the correlation coefficient relates to fit, and explain when it is appropriate to use the regression equation to make predictions.</i></p> <p><b>Strand 3: Patterns, Algebra, and Functions, Concept 2: Functions and Relationships, High School Level</b></p> <p>PO 5: Recognize and solve problems that can be modeled using a system of two equations in two variables.</p> <p>PO 6: Recognize and solve problems that can be modeled using a quadratic function.</p> <p>PO 7: Determine domain and range of a function from an equation, graph, table, description, or set of ordered pairs.</p> <p><b>Strand 3: Patterns, Algebra, and Functions, Concept 2: Functions and Relationships, College Work Readiness Level</b></p> <p><i>PO 1: Express and solve problems that can be modeled using linear, quadratic, logarithmic, exponential, cubic, reciprocal, absolute value, and step and other piecewise-defined functions; interpret their solutions in terms of the context.</i></p>

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4.4	Evaluate mathematical solutions for reasonableness.	<p><b>Strand 1: Number and Operations, Concept 3: Estimation, High School Level</b>          PO 2: Use estimation to determine the reasonableness of a solution.          PO 3: Determine when an estimate is more appropriate than an exact answer.</p> <p><b>Strand 1: Number and Operations, Concept 3: Estimation, College Work Readiness Level</b>  <i>PO 1: Recognize the limitations of estimations by assessing the amount of error resulting from estimation and determining whether the error is within acceptable tolerance limits.</i></p> <p><b>Strand 5: Structure and Logic, Concept 2: Logic, Reasoning, Problem Solving, and Proof, College Work Readiness Level</b>  <i>PO 3: Evaluate a solution for reasonableness and interpret the meaning of the solution in the context of the original problem.</i></p>

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4.5	Apply mathematical concepts to modeling.	<p><b>Strand 3: Patterns, Algebra, and Functions, Concept 2: Functions and Relationships, High School Level</b> PO 5: Recognize and solve problems that can be modeled using a system of two equations in two variables. PO 6: Recognize and solve problems that can be modeled using a quadratic function.</p> <p><b>Strand 3: Patterns, Algebra, and Functions, Concept 2: Functions and Relationships, College Work Readiness Level</b> <i>PO 1: Express and solve problems that can be modeled using linear, quadratic, logarithmic, exponential, cubic, reciprocal, absolute value, and step and other piecewise-defined functions; interpret their solutions in terms of the context.</i></p> <p><b>Strand 4: Geometry and Measurement, Concept 1: Geometric Properties, High School Level</b> PO 2: Visualize solids and surfaces in 3-dimensional space when given 2-dimensional representations and create 2-dimensional representations for the surfaces of 3-dimensional objects.</p> <p><b>Strand 4: Geometry and Measurement, Concept 2: Transformation of Shapes, High School Level</b> PO 4: Determine the effects of a single transformation on linear or area measurements of a 2-dimensional figure.</p> <p><b>Strand 4: Geometry and Measurement, Concept 4: Measurement, High School Level</b> PO 3: Determine the effect that changing dimensions has on the perimeter, area, or volume of a figure. PO 4: Solve problems involving similar figures using ratios and proportions.</p>
<b>STANDARD 5.0 – USE SYSTEMS OF MEASUREMENT</b>		
5.1	Convert units from one system of measurement to another	<p><b>Strand 1: Number and Operations, Concept 2: Numerical Operations, High School Level</b> PO 4: Compute using scientific notation.</p> <p><b>Strand 1: Number and Operations, Concept 2: Numerical Operations, College Work Readiness Level</b> <i>PO 4: Define polar coordinates; relate polar coordinates to Cartesian coordinates.</i></p> <p><b>Strand 4: Geometry and Measurement, Concept 3: Coordinate Geometry, College Work Readiness Level</b> PO 6: Convert between rectangular and polar coordinates.</p> <p><b>Strand 4: Geometry and Measurement, Concept 4: Measurement, High School Level</b> PO 1: Use dimensional analysis to keep track of units of measure when converting.</p> <p><b>Strand 4: Geometry and Measurement, Concept 4: Measurement, College Work Readiness Level</b> PO 1: Explain, use, and convert between degree and radian measures for angles.</p>
5.2	Apply precision, accuracy & tolerance in measurement systems	<p><b>Strand 1: Number and Operations, Concept 3: Estimation, High School Level</b> PO 3: Determine when an estimate is more appropriate than an exact answer.</p> <p><b>Strand 1: Number and Operations, Concept 3: Estimation, College Work Readiness Level</b> <i>PO 1: Recognize the limitations of estimations by assessing the amount of error resulting from estimation and determining whether the error is within acceptable tolerance limits.</i></p>
<b>STANDARD 6.0 – APPLY ENGINEERING TECHNOLOGY AND TOOLS</b>		
6.1	Use software tools to solve problems, model, and display	See Note

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	data	
6.2	Use appropriate devices such as calipers, oscilloscope, digital multimeter	See Note
6.3	Interpret graphical data such as plans, diagrams and working drawings	See Note
6.4	Recognize safe use of tools, machines, equipment, and materials	See Note
<b>STANDARD 7.0 – IDENTIFY DIFFERENT DISCIPLINES WITHIN THE FIELD OF ENGINEERING</b>		
7.1	Identify the responsibilities of the various engineering disciplines such as mechanical, software, architectural, civil/structural, electrical, chemical, mining	See Note
7.2	Compare and contrast the responsibilities of various engineering discipline such as mechanical, software, architectural, civil/structural, electrical, chemical, mining	See Note
7.3	Identify the skills and education needed to enter a particular field of engineering.	See Note
<b>STANDARD 8.0 – RECOGNIZE THAT ENGINEERING IS A HUMAN ENDEAVOR INTENDED TO ADDRESS THE NEEDS OF A GLOBAL SOCIETY</b>		
8.1	Recognize the societal, legal, and ethical responsibilities of engineering	See Note
8.2	Recognize the impact of engineering from multiple perspectives, such as, economic, environmental, political,	See Note

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	sustainable, health and safety	
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