Clovis Community College

Class Assessment 2013-2014

Class: Math 110 College Algebra **Faculty: Hadea Hummeid**

NMCCN: MATH 1113

Competencies (Learning Outcomes Being Measured)	**Assessment Procedures** (Process/Instrument named or described – rubric attached)	**Assessment Results**	**How Results Will Be Used To Make Improvements**
1. Students will graph functions: Students should: a. Sketch graphs of linear, higher-higher order polynomial, rational, absolute value, exponential, logarithmic and radical functions. b. Sketch a graph using a point plotting and analysis techniques including basic transformations of functions such as horizontal and vertical shifts, reflection, stretches and compressions. c. Determine the vertex, axis of symmetry, maximum and minimum, intercepts of a quadratic equation.	The course objectives are distributive to the students at the beginning of the semester. At the end of the semester students are given a course-wide comprehensive final exam correlated to the objectives. A bench mark of 70% is used to determine whether the competency has been met. Twenty seven students from two sections were assessed in the Fall 2013 and twenty eight students from the two sections were assessed in the Spring2014. The final exam is multiple choices and each problem was correlated with the objectives of the course.	The course wide average for the Fall 2013 was 62.5%. The course wide average for Spring 2014 was 72.5%. The course-wide of the nine objectives measured for competency 1 was for 59.3% Fall 2013 and 85.4% for Spring 2014. Fall 2013 four of nine objectives were met and Spring 2014 six of nine objectives were met. The average for competency 1a was for 43.1% Fall2013 and 76.4% for Spring 2014. The average for competency 1b was 85.3% for Fall2013 and 91% for Spring 2014. The average for competency 1c was 32% for Fall2013 and 49% for Spring 2014	The improvement necessary will be made for the following competencies: Competency 1: Areas that needs improvement are parabola problems. I will apply more visual representation on how the vertex, axis of symmetry and maximum or minimum values are found.
2. Students will solve various kinds of equations. Students should:		The course-average of the seven objectives assessed for competency 2 was 70.4% for Fall20143 and 70.0% for	Competency 2: Areas that needs improvement are solving for logarithm. Supply students with more exercises involving

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a. Solve quadratic equations using .factoring, the square root method, completing the square and the quadratic formula. b. Solve exponential and logarithmic equations. c. Solve a system of two or three linear equations.		Spring 2014. Fall 2013 four of seven objectives were met and Spring 2014 three of seven objectives were met. The average for competency 2a was for 82% Fall2013 and 88% for Spring 2014. The average for competency 2b was for 65.3% Fall2013 and 67.5% for Spring 2014. The average for competency 2c was 78% for Fall2013 and 56% for Spring 2014. The department also includes three additional objectives for finding the standard form of a circle and starting the center and radius (68.5% Fall 2013 and 70% Spring2014), Solving equations using inverse operation equations (65.5% Fall 2013 and 72% Spring2014), solving third degree and higher equations (65.5% Fall 2013 and 61.5% Spring2014). The averages for the additional objectives are reflected in the course-wide average for this competency.	logarithm equations. Spend more time on the final review with solving a system of linear equations with two or three variables.

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3. Students will demonstrate the use of function natation and perform operations on functions. Students should: a. Find the value of the function for a given domain value. b. Add, subtract, multiply, divide and compose functions. c. Determine the inverse of a function. d. Compute the difference quotient for a function. e. Correct use function natation and vocabulary related to functions, i.e. domain, range, independent variable of, symmetry across the x-axis, etc…		The course-wide average of the ten objectives assessed for competency was 63.0% for Fall 2013 and 76.0% for Spring 2014. . Fall 2013 three of seven objectives were met and Spring 2014 three of seven objectives were met. The average for competency 3a was for 81% Fall2013 and 91% for Spring 2014. The average for competency 3b was for 82.3% Fall2013 and 93.3% for Spring 2014. The average for competency 3c was 51.5% for Fall2013 and 63.5% for Spring 2014. The average for competency 3d was 50% for Fall2013 and 63% for Spring 2014. The average for competency 3e was 63.8% for Fall2013 and 71% for Spring 2014.	Competency 3: Areas that needs improvement are finding a difference of quotient. I will supply worksheet to improve on finding a difference of quotient. Spend more time on reviewing how to find the inverse.
4. Students will model/solve real-world problems. Students should: a. Use and understand slope as rate of change. b. Use equations and systems of equations to solve application problems. c. Apply knowledge of functions to solve specific applications problems.		The overall average of the eight objectives used to measure competency 4 was 59.6% for Fall 2013 and 63.9% for Spring 2014. . Fall 2013 three objectives were met and Spring 2014 four objectives were met. The average for competency 4a was for 21% Fall2013 and 51% for Spring 2014. The average for competency 4b was for	Competency 4: Areas that need improvements are compound interest problems as well as growth or decay problems. Spend more time on these problems in the classroom.

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d. Solve compound interest problems. e. Solve application problems involving maximization or minimization of a quadratic function. f. Solve exponential growth and decay problems.		91.5% Fall2013 and 88% for Spring 2014. The average for competency 4c was 51.5% for Fall2013 and 72% for Spring 2014. The average for competency 4d was 75.5% for Fall2013 and 44.5% for Spring 2014. The average for competency 4e was 71% for Fall2013 and 91% for Spring 2014. The average for competency 4f was 58% for Fall2013 and 39.5% for Spring 2014.	

Faculty Member Completing Assessment: Hadea Hummeid **Date: 6/30/2014**

Reviewed by:

(Division chair) Todd Kuykendall **Date: 6/30/2014**

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All assessments are due from the Division Chairs to the Assessment Committee Chair by July 30.

Clovis Community College

Class Assessment 2013-2014

Class: Math 113 Math for General Education **Faculty: Mrs. VK Bussen**

Competencies (Learning Outcomes Being Measured)	**Assessment Procedures** (Process/Instrument named or described – rubric attached)	**Assessment Results**	**How Results Will Be Used To Make Improvements**
1. Construct and analyze graphs and/or data sets. Rationale/Elaboration *Students should:* a) Gather and organize information. b) Understand the purpose and use of various graphical representations such as tables, line graphs, tilings, networks, bar graphs, etc. c) Interpret results through graphs, lists, tables, sequences, etc. d) Draw conclusions from data or various graphical representations.	The course objectives are distributed to students with the Syllabus at the beginning of each semester. Four objective-based tests, one written report, and one web quest discussion board are used for assessment. Achieving 70% and above is the minimum goal for determining success on each competency. There **40 students** from two online courses; one section from each semester. For competency #1, students were assessed from questions on an objective based test. (Stats, etc. /Test #3)	The class average for this competency was 77.6% with a median of 84.7% Scores revealed that interpreting results and drawing conclusions from data were the highest scores and the lowest understood the purpose and use of the data.	No changes planned. This is a new competency and new baseline assessment.
2. Use and solve various kinds of equations. Rationale/Elaboration *Students should:* a) Understand the purpose of and use appropriate formulas within a mathematical application. b) Solve equations within a mathematical application. c) Check answers to problems and determine the reasonableness of results.	Students were assessed from questions on two objective based test. (Conversions, Logic, etc. /Test #1 & #2)	The class average for this competency was 83.4% with a median of 87.3% Scores revealed that that solving equations within a mathematical application had the highest scores and the highest and the lowest from using appropriate formulas for these competencies.	No changes planned. This is a new competency and new baseline assessment.

Competencies (Learning Outcomes Being Measured)	**Assessment Procedures** (Process/Instrument named or described – rubric attached)	**Assessment Results**	**How Results Will Be Used To Make Improvements**
3. Understand and write mathematical explanations using appropriate definitions and symbols Rationale/Elaboration *Students should:* a) Translate mathematical information into symbolic form. b) Define mathematical concepts in the student's own words. c) Use basic mathematical skills to solve problems.	Students were assessed from questions on two objective based test. (Geometry, Conversions, Logic, etc. /Test #1 & #2)	The class average for this competency was 79.6% with a median of 84.4% Scores revealed that using basic mathematical skills to solve problems had the highest scores and the lowest were translating mathematical information into symbolic form for these competencies.	No changes planned. This is a new competency and new baseline assessment.
4. Demonstrate problem solving skills within the context of mathematical applications. Rationale/Elaboration *Students should:* a) Show an understanding of a mathematical application both orally and in writing. b) Choose an effective strategy to solve a problem. c) Gather and organize relevant information for a given application. d) Draw conclusions and communicate the findings.	Students were assessed from questions on an objective based test. (Economics, personal finances, loan payments & investments, etc. /Test #4)	The class average for this competency was 88.3% with a median of 90.5% Scores revealed that gathering and organizing relevant information and drawing conclusions had the highest scores and the lowest were choosing an effective strategy to solve a problem and understanding a mathematical approach in writing of these competencies.	No changes planned. This is a new competency and new baseline assessment.

Faculty Member Completing Assessment: VK Bussen **Date: June 30, 2014**

Reviewed by: (Division chair) **Date:**

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Clovis Community College
Core Competencies Assessment 2013-2014—Area II: Mathematics—Statistics

Class: STAT 213 Statistical Methods **Faculty: Sarah DeVore**

NM Common Core No.: MATH 2114

Competencies (Learning Outcomes Being Measured)	**Assessment Procedures** (Process/Instrument named or described – rubric attached)	**Assessment Results**	**How Results Will Be Used To Make Improvements**
1. Students will construct and analyze graphs and/or data sets. Students should: a. Organize data and display frequency distribution and find percentile points and ranks for the distribution b. Graph data distributions using the correct format for graphs, to include: histograms, frequency polygons, box plots and scatter plots and draw appropriate inferences	Student Competency Based on Final Exam	Both parts of this competency were assessed on the final exam, with 67.6% and 76.5% of students demonstrating sufficient ability in the two parts of this competency.	Though 67.6% is a reasonable percent of student understanding, above 70% is desired, so more time will be spent on the first part of this competency in the future.
2. Students will use and solve various kinds of questions. Students should: a. Compute mean, median, mode, and standard deviation. b. Calculate the least squares regression equation and the correlation coefficient. c. Determine basic probabilities and probabilities associated with the standard normal curve. d. Understand the binomial distributions of sample means e. Compute sampling distributions of sample means f. Compute the mean and standard deviation of sample means	Student Competency Based on Final Exam	Seven of the nine parts of this competency were assessed on the final exam. Parts e and f were not tested on the final exam. Parts a, b, c, and g had above 68% of students demonstrating ability. Parts d, h, and I had between 44% and 56% of students demonstrating understanding.	Final exam questions allowing for demonstration of ability in parts e and f of this competency should be included on the final in future semesters. Parts d, h, and I did not have enough students demonstrating competency, and need more emphasis in future classes.

Competencies (Learning Outcomes Being Measured)	**Assessment Procedures** (Process/Instrument named or described – rubric attached)	**Assessment Results**	**How Results Will Be Used To Make Improvements**
g. Calculate margin of error given sample size and sample size given margin of error. h. Construct confidence intervals for population means and proportions. i. Calculate test statistics			
3. Students will understand and write mathematical explanations using appropriate definitions and symbols. Students should be able to: a. Use Z-scores appropriately b. Construct probability distributions c. Write confidence intervals d. Understand the Central Limit Theorem and when to apply it e. Write null and alternate hypotheses f. Understand the concept of significance level and P values g. Apply the steps for inference/hypothesis testing h. Describe the basic elements of sampling and experimental design i. Define parameters and statistics	Student Competency Based on Final Exam	Six of the nine parts of this competency were assessed on the final exam. Parts b, d, and h were not assessed with questions on the final exam. Parts c, e, and f had above 60% of the students demonstrating understanding. Parts a, g, and I had between 23% and 58% of the students demonstrating understanding.	Only 60.8% of students showed understand of parts c, so this area should receive more emphasis in the future. Parts a, g, and i had less than 60% of students demonstrate understanding, so these parts definitely need more emphasis in the future. Parts b, d, and h were not assessed on the final, so questions assessing these parts of the competency should be included on the final in the future.

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Competencies (Learning Outcomes Being Measured)	**Assessment Procedures** (Process/Instrument named or described – rubric attached)	**Assessment Results**	**How Results Will Be Used To Make Improvements**
4. Students will demonstrate problem solving skills within the context of mathematical applications. Students should: a. Determine appropriate methods to display data b. Compare measures using Z-scores c. Identify and analyze outliers d. Use least-square regression equations to predict values e. Select appropriate sampling techniques f. Determine of random variables are continuous or discrete g. Choose and construct appropriate hypothesis tests for population means and proportions End Area II – Statistics	Student Competency Based on Final Exam	Three of seven parts of this competency were assessed on the final. Parts a, b, c, and e were not assessed with the final exam. Parts d and f had 76.5% of students demonstrating understanding. Part g had only 23.5% of students demonstrating understanding.	Parts a, b, c, and e should be incorporated into the final exam in the future. Part g should have more time spent on it since such a low percentage of students demonstrated understanding.

Faculty Member Completing Assessment: Sarah Devore **Date: 6/30/2014**

Reviewed by: Todd Kuykendall **Date: 6/30/2014**
(Division Chair)

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