Course ID	Course Name	Course SLO	Reporting Period	Number of Sections Assessed	Number of Students Assessed	Result	% of Students Who Met the SLO	Areas of Outstanding Student Performance	Areas of Student Performance in Need of Improvement	SLO Identified Resource Needs (See Instructions)	Explanation of Resources Needed
MATH 10	Developing Confidence in Math	Analyze causes of math anxiety.	2017 - 2018: Fall 2017	3	16	Students were surveyed at the end of the course. 100% of the students affirmed a greater understanding of the causes of math anxiety by the end of the course.	100			None	N/A
		Apply learning and test-taking strategies to increase success in mathematics.	2017 - 2018: Fall 2017	3	16	Students were surveyed at the end of the course. 100% of the students affirmed a greater ability to apply what they learned in Math10 to increase their success in learning mathematics.	100			None	N/A
		Create a study plan for mathematics tests and courses.	2017 - 2018: Fall 2017	3	16	Students were surveyed at the end of the course. 100% of the students affirmed a better ability to create a study plan for math tests and courses.	100			None	N/A
		Examine myths about learning mathematics and recognize experiences in math which have influenced personal attitudes toward math.	2017 - 2018: Fall 2017	3	16	Students were surveyed at the end of the course. 93.75% of the students affirmed a better understanding of the influences that have help create their attitude toward math.	94			None	N/A
MATH 30	Pre-Algebra Mathematics	Graph linear equations in two variables.	2017 - 2018: Spring 2018	6	174	The average score for passing students was approximately 60% while failing students answered approximately 40% of the problems correctly. Interestingly both student populations did better with the mechanics needed for graphing, versus the actual graphing of a line.	60			FTE, Instructional Assistants, OIR support, Tutors	Math 30 is a remedial course. Students are often not yet proficient on "how to be a student", and so they benefit greatly from the support the listed resources would supply.
		Manually solve applied problems using rational numbers, variable expressions, scientific notation, equations, geometric formulas, measurement conversions, proportions, and percent.	2017 - 2018: Spring 2018	6	174	The average score for passing students was approximately 68% while failing students answered approximately 45% of the problems correctly.	68			FTE, Instructional Assistants, OIR support, Tutors	Math 30 is a remedial course. Students are often not yet proficient on "how to be a student", and so they benefit greatly from the support the listed resources would supply.
MATH 310	Mathematical Discovery	Develop and explain a mathematical solution to a problem not previously encountered by the student.	2017 - 2018: Spring 2018	1	24	75% of the students that successfully completed the class correctly answered 12 or more of the 16 multiple-choice and free response questions.	75	Students seemed to excel in creating truth tables and applying logic to possible truth values given a statement. They also excelled in the arithmetic involving different bases, and how to model their conclusions.	Students could use more practice with subsets and shading intersections and unions in Venn Diagrams.	None	N/A

		Explore a mathematical problem independently, extending their solution to questions not necessarily posed by the instructor.	2017 - 2018: Spring 2018	1	24	87.5% of the students that successfully completed the class correctly answered 5 or more of the 6 free response questions.	88	Students were adept in modular arithmetic, pulling known processes to extrapolate new ones.	Students could use more practice in setting up a problem and thinking of a logical solution as opposed to a purely algebraic one.	None	N/A
		Explore new branches of mathematics by recognizing connections and patterns to previously encountered topics.	2017 - 2018: Spring 2018	1	24	83% of the students that successfully completed the class correctly answered 11 or more of the 15 multiple choice and free response questions.	83	Students were adept in finding large sums using the Gauss method, and then flipping the formula around to determine the number of terms when given the sum.	Students could use more practice in applying divisibility rules to large numbers.	None	N/A
		Solve applied problems by recognizing connections between methods of solution employed in various mathematical fields.	2017 - 2018: Spring 2018	1	24	83% of the students the successfully completed the class correctly answered 5 or more of the 7 multiple choice and free response questions.	83	Students were good at using logic to identify valid arguments or if there was a fallacy to the original statement.	Students could use more practice in determining if a number is prime, using divisibility rules.	None	N/A
MATH 410	Introduction to Linear Algebra	Find eigenvalues and eigenvectors and use them in applications.	2017 - 2018: Spring 2018	1	37	59% (22 out of 37) of the students who successfully completed the course met the SLO.	59			Other	Students need to be assigned and held accountable for more application-based exercises, and instructors don't have the time to dedicate to grading the multitude of application exercises students need to improve their performance. Consequently, qualified graders are needed in order to adequately address this deficiency.
		Find the dimension of spaces such as those associated with matrices and linear transformations.	2017 - 2018: Spring 2018	1	37	92% (34 out of 37) of the students who successfully completed the course met the SLO.	92			None	N/A
		Prove basic results in linear algebra using appropriate proof-writing techniques such as linear independence of vectors, properties of subspaces, linearity, injectivity and surjectivity of functions, and properties of eigenvectors and eigenvalues.	2017 - 2018: Spring 2018	1	38	50% (19 out of 38) of the students who successfully completed the course met the SLO.	50			Other	Textbooks on the market that teach "how" to acquire and "how" to disseminate to students the "critical thinking skills" needed to succeed at proofs. In my 33 years of experience, I've never come across a book on the market that teaches how to prove. It's just expected that if a bunch of proofs are unveiled, both teachers and students will learn "how" to prove. The super talented students learn, but the middle-of-the-road student doesn't. For instance, it would be nice to have a text that discusses failed attempts at proofs, or clues both a teacher and a student in on the material needed prior to completing a proof. Here, read P, Q, and R, and do X, Y, and Z, and then try this proof. Most instructors can't prove the things that are proved in a text on demand, like we sometimes expect from our students, especially at the Linear Algebra level.
		Solve a variety of systems of equations using matrices using methods appropriate to lower division linear algebra.	2017 - 2018: Spring 2018	1	37	84% (31 of 37) of the students who completed the course successfully met the SLO, earning at least 75% of the points solving a variety of systems using matrices.	84			None	N/A

		Use bases and orthonormal bases to solve problems in linear algebra.	2017 - 2018: Spring 2018	1	37	62% (23 out of 37) of the students who successfully completed the course met the SLO.	62			None	N/A
STAT 300	Introduction to Probability and Statistics	Analyze and interpret applications using data from various disciplines including business, social sciences, psychology, life sciences, health science, and education.	2017 - 2018: Fall 2017	3	30	Of those that received an A, 5/6 answered at least two of the three questions correctly. Of those that received a B, 6/6 answered at least two of the three questions correctly. Of those that received a C, 5/6 answered at least two of the three questions correctly. Of those that received a D, 4/6 answered at least two of the three questions correctly. Of those that received an F, 4/6 answered at least two of the	80	Students are able to see through the application to what needs to be done with the numbers that were given in the exercises. Students know how to use their calculator to find confidence intervals for application problems.	Students need help understanding what a confidence interval represents in the context of the application problem.	Tutors	Students asked for additional tutoring but none was available at RCC. Student would greatly benefit from an embedded tutor.
		Analyze continuous probability distributions, including normal and t-distributions, by calculating probabilities.	2017 - 2018: Fall 2017	3	30	Of those that received an A, 6/6 answered at least one of two questions correctly. Of those that received a B, 6/6 answered at least one of two questions correctly. Of those that received a C, 6/6 answered at least one of two questions correctly. Of those that received a D, 5/6 answered at least one of two questions correctly. Of those that received an F, 6/6 answered at least one of two questions correctly.	96	Students understand z scores very well and know how to use their calculator to find the area under the normal curve.	Students needs to practice drawing the bell curve and shading in the area that they are looking for.	Tutors	Students asked for additional tutoring but none was available at RCC. Student would greatly benefit from an embedded tutor.
		Analyze data by computing measures of central tendency, variation, and position.	2017 - 2018: Fall 2017	3	30	Of those that received an A, 6/6 answered at least 5 of the 7 questions correctly. Of those that received a B, 6/6 answered at least 5 of the 7 questions correctly. Of those that received a C, 6/6 answered at least 5 of the 7 questions correctly. Of those that received a D, 5/6 answered at least 5 of the 7 questions correctly. Of those that received an F, 5/6 answered at least 5 of the 7 questions correctly.	93	Students are very good at finding the mean, median, and z-score. They have been exposed to these concepts from gradeschool and have the formulas memorized.	Students have a hard time finding the standard deviation, quartile values and percentile values. It is hard for them to remember the formula for standard deviation if they have never scene it. Consider exposing them to the notation and formula in math 120 when square roots are covered.	Tutors	Students asked for additional tutoring but none was available at RCC. Student would greatly benefit from an embedded tutor.
		Apply concepts of sample space and probability.	2017 - 2018: Fall 2017	3	30	Of those that received an A, 5/6 answered the question correctly. Of those that received a B, 5/6 answered the question correctly. Of those that received a C, 5/6 answered the question correctly. Of those that received a D, 5/6 answered the question correctly. Of those that received an F, 5/6 answered the question correctly.	25	Students are very good at writing out and drawing out the sample space. They see the big picture of what is to be counted.	Students need to pay closer attention to the setup of the problem. They need higher comprehension skills. Several of the students thought that there was only 1 die being rolled.	Tutors	Students asked for additional tutoring but none was available at RCC. Student would greatly benefit from an embedded tutor. Probability is one of the hardest topics on the statistics class. Students need to practice the basics in an earlier class so that more time can be spent on the the addition, multiplication rules as well as counting the total number of outcomes.

		Calculate the mean and variance of a discrete distribution.	2017 - 2018: Fall 2017	3	30	Of those that received an A, 6/6 answered at least 1 of the 2 questions correctly. Of those that received a B, 6/6 answered at least 1 of the 2 questions correctly. Of those that received a C, 6/6 answered at least 1 of the 2 questions correctly. Of those that received a D, 6/6 answered at least 1 of the 2 questions correctly. Of those that received an F, 6/6 answered at least 1 of the 2 questions correctly.	100	Students remember very well how to use their calculator. Some students wrote out the formula by hand.		Tutors	Students asked for additional tutoring but none was available at RCC. Student would greatly benefit from an embedded tutor.
		Create and interpret confidence interval estimates of population parameters involving samples from both one and two populations.	2017 - 2018: Fall 2017	3	30	Of those that received an A, 5/6 answered at least 4 of the 5 questions correctly. Of those that received a B, 5/6 answered at least 4 of the 5 questions correctly. Of those that received a C, 5/6 answered at least 4 of the 5 questions correctly. Of those that received a D, 2/6 answered at least 4 of the 5 questions correctly. Of those that received an F, 2/6 answered at least 4 of the 5 questions correctly.	63	Students know how to use their calculator well to find the margin of error and confidence intervals.	Students need help analyzing the problem and knowing which formula to use where. Students need help reading the distribution tables.	Tutors	Students asked for additional tutoring but none was available at RCC. Student would greatly benefit from an embedded tutor.
		Distinguish between probability models appropriate to different chance events and calculate probability according to these methods.	2017 - 2018: Fall 2017	3	30	Of those that received an A, 4/6 answered the question correctly. Of those that received a B, 5/6 answered the question correctly. Of those that received a C, 4/6 answered the question correctly. Of those that received a D, 5/6 answered the question correctly. Of those that received an F, 4/6 answered the question correctly.	73	Students have a good sense of what criteria should be met in order for a binomial distribution to result. They underline each of the parts of the procedure to match the definition they memorized.	Students do not recognize that "keeping track of the number of fives" rolled results in only two outcomes. Students need a better understanding of what is considered a success and a failure.	Tutors	Students asked for additional tutoring but none was available at RCC. Student would greatly benefit from an embedded tutor.
		Distinguish between types of data as well as their different scales of measurement and corresponding implications.	2017 - 2018: Fall 2017	3	30	Of those that received an A, 6/6 answered at least one of the questions correctly. Of those that received a B, 6/6 answered at least one of the questions correctly. Of those that received a C, 6/6 answered at least one of the questions correctly. Of those that received a D, 6/6 answered at least one of the questions correctly. Of those that received an F, 5/6 answered at least one of the questions correctly.	29	Students easily determined the level of measurement (Nominal, ordinal, interval ratio). They understand the difference between the discrete and continuous very well.	Students need better reading skills in order not to overlook the key words that determine whether a variable is discrete or continuous.	Tutors	Students asked for additional STAT tutoring but there was none at RCC.

		Distinguish the difference between sample and population distributions and analyze the role played by the Central Limit Theorem.	2017 - 2018: Fall 2017	3	30	Of those that received an A, 4/6 answered the question correctly. Of those that received a B, 6/6 answered the question correctly. Of those that received a C, 2/6 answered the question correctly. Of those that received a D, 2/6 answered the question correctly. Of those that received an F, 0/6 answered the question correctly.	47	Students understand the relationship between the sampling distribution and the mean.	Students need comprehension and reading skills. Many only looked at the number written in numeric format and missed the number written in English. Students do not understand the relationship between the sampling distribution and the standard deviation.	Tutors	Students asked for additional tutoring but none was available at RCC. Student would greatly benefit from an embedded tutor.
		Identify methods of obtaining data and related advantages and disadvantages of each.	2017 - 2018: Fall 2017	3	30	Of those that received an A, 5/6 answered the question correctly. Of those that received a B, 6/6 answered correctly. Of those that received a C, 6/6 answered correctly. Of those that received a D, 5/6 answered correctly. Of those that received an F, 6/6 answered correctly.	28	Students easily recognized an example with random sampling. Based on the results they have very good deductive reason	Of the students that did not get it correct they either misinterpreted the situation described or just did not know the definitions of the sampling methods and therefore guessed.	Tutors	Embedded tutors would really help students understand and assimilate the material. Students asked for additional tutoring at RCC but there was none to offer.
		Interpret data displayed in tables and graphically.	2017 - 2018: Fall 2017	3	30	Of those that received an A, 6/6 answered at least two of the three questions correctly. Of those that received a B, 6/6 answered at least two of the three questions correctly. Of those that received a C, 6/6 answered at least two of the three questions correctly. Of those that received a D, 6/6 answered at least two of the three questions correctly. Of those that received an F, 4/6 answered at least two of the	28	Student are able to use deductive reasoning to choose the correctly constructed table or chart. They understand how to translate the relative frequency from a table to the vertical axis of a graph. Students recognize that a Pareto chart is drawn with the bars' heights in descending order	Students need help understanding the difference between frequency and relative frequency. Of those that answered third question incorrectly they either confused the vertical scale with probability or they forgot that in a Pareto chart the height of the bars are drawn in descending order.	Tutors	Students asked for additional tutoring but none was available at RCC. Student would greatly benefit from an embedded tutor.
		Select the appropriate hypothesis test and determine and interpret the statistical significance for tests on one or two population(s) (including p-values and type I/II errors), and explain the conclusion of the test.	2017 - 2018: Fall 2017	3	30	Of those that received an A, 5/6 answered at least two of the three questions correctly. Of those that received a B, 5/6 answered at least two of the three questions correctly. Of those that received a C, 3/6 answered at least two of the three questions correctly. Of those that received a D, 4/6 answered at least two of the three questions correctly. Of those that received an F, 3/6 answered at least two of the	1	Students are good at choosing the correct hypothesis test. They know the ques to decide between a one or two sample/proportion test for a mean or a proportion.	Students need help understanding the criteria by which to reject the null hypothesis. They need help connecting variables to what they stand for and interpreting them to decide whether to reject the null.	Tutors	Students asked for additional tutoring but none was available at RCC. Student would greatly benefit from an embedded tutor.

		Use linear regression and ANOVA analysis for estimation and inference, and interpret the associated statistics.	2017 - 2018: Fall 2017	3	30	Of those that received an A, 6/6 answered the question correctly. Of those that received a B, 6/6 answered the question correctly. Of those that received a C, 6/6 answered the question correctly. Of those that received a D, 6/6 answered the question correctly. Of those that received an F, 5/6 answered the question correctly.	97	Students know how to use their calculator to find a linear regression model. They correctly choose the correct correlation coefficient value that matches with the scatter plot.		Tutors	Students said that need additional help with a tutor specifically working with their calculators. There were no Stat tutors available at RCC.
		Use statistical software or graphing calculator to calculate single-variable and two-variable statistics and analyze the results.	2017 - 2018: Fall 2017	3	30	Of those that received an A, 4/6 answered the question correctly. Of those that received a B, 5/6 answered the question correctly. Of those that received a C, 4/6 answered the question correctly. Of those that received a D, 2/6 answered the question correctly. Of those that received an F, 1/6 answered the question correctly.	53		Students need help understanding when to use a one-tail or a two-tail hypothesis test. Students need to understand the connection between the p-value and the significance level. Students need help in understanding cause and effect relationships between p-value and significance level.	Equipment	Students asked for additional tutoring but none was available at RCC. Student would greatly benefit from an embedded tutor.