

Mathematical Sciences Institutional (ILO), Program (PLO), and Course (SLO) Alignment

Use the checklists provided to evaluate your SLO statements. Please add or revise PLO and SLO statements directly on this form.
Or, if you prefer to make changes on the electronic version contact your Facilitator Junko Forbes, or Angie Snider in your Division Office, to have the grid emailed to you. When SLO, PLO and ILO alignment changes are made, please make changes in red.
Return the completed grid to your Facilitator by Friday, Nov 8th.

Program: Math for G.E. and Non-Science Majors	Number of Courses: 6	Date Updated	Submitted by Junko Forbes Ext: 7217
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ILO Rating Rubric

4 - A major focus of the course. Direct instruction is provided. Students are evaluated multiple times (and possibly in various ways) throughout the course.

3 - An important part of the course. Some direct instruction is provided and students are evaluated on the concepts once or twice within the course.

2- Only a minor focus of the course. Some instruction is given in the area but students are not formally evaluated on the concepts.

1- May be tangentially part of the class, but is not directly taught or evaluated or is not part of the course at all.

Institutional Learning Outcomes (ILOs)	I. Content Knowledge	II. Critical, Creative, and Analytical Thinking	III. Communication and Comprehension	IV. Professional and Personal Growth	V. Community and Collaboration	VI. Information and Technology Literacy
Overall Program Rating Rate each from 1-4 based on above rubric	4	4	3	2	2	3

Program Level SLOs A minimum of 3 and maximum of 6 PLOS. There are, however, exceptions. For example, if department faculty have developed one or two comprehensive PLO statements that reflect the program mission and covers the major components and the overarching goals of the program, they may present them to their Dean and Facilitator for approval as is. In cases where the facilitator or dean or faculty disagree with the rigor of the statements, the PLO statement will be forwarded to the Assessment of Learning Committee (ALC) for review and recommendations.

Include PLO #, Short Title, and PLO statement. Example: PLO #2 Ethics and Professionalism

ILOs to PLOs Alignment (Rate 1-4)	I	II	III	IV	V	VI
	PLO #1 Graphical Methods Students will be able to analyze and solve application problems involving business, the social sciences, and/or biological sciences using graphical methods.	4	4	3	2	2
PLO #2 Analytical and Computational Skills Students will be able to analyze and solve application problems involving business, the social sciences, and/or biological sciences using analytical and computation skills	4	4	3	2	1	3

Course Level SLOs A minimum of 3 and maximum of 6 SLOs. There are, however, exceptions. For example, if department faculty have developed one or two comprehensive SLO statements that cover the major components and the overarching goals of the course, they may present them to their Dean and Facilitator for approval as is. In cases where the facilitator or dean or faculty disagree with the rigor of the statements, the SLO statement will be forwarded to the Assessment of Learning Committee (ALC) for review and recommendations. <i>Include SLO #, Short Title, and SLO Statement Example: Math 170 SLO #3 Vectors and Complex Numbers.</i>	Course to Program SLO Alignment <i>Mark with an X if you will use the course when assessing your PLO.</i>			ILOs to Course SLOs Alignment (Rate 1-4)					
	P1	P2	P3	I	II	III	IV	V	VI
Mathematics 120 Nature of Mathematics: SLO #1 Solve Loan Problems Apply techniques of simple and compound interest to solve loan and annuity problems.		x		4	4	2	2	2	1
Mathematics 120 Nature of Mathematics: SLO #2 Solve Application Problems Using Graphical Methods Solve application problems using graphical methods such as: 3-ring Venn diagrams, truth tables, Euclidean, Riemannian and Lobachevskian geometries.	x			4	4	2	2	2	1
Mathematics 120 Nature of Mathematics: SLO #3 Analyze Voting System Analyze voting systems, methods of apportionment and representation to further the understanding of the political process.		x		4	4	2	2	2	1
Mathematics 120 Nature of Mathematics: SLO #4 Solve Application Problems Solve application problems using basic counting principles, permutations, combinations, probability, expected value and frequency distribution.	x			4	4	2	2	2	1
Mathematics 130 College Algebra: SLO #1 Solve Nonlinear Inequalities Solve nonlinear inequalities and a variety of equations such as: polynomial, rational, radical, exponential, and logarithmic.	x	x		4	4	2	2	2	1
Mathematics 130 College Algebra: SLO #2 Solve Problems using Graphical Methods Solve problems using graphical methods involving a variety of functions, such as: polynomial, rational, radical, exponential, and logarithmic.	x			4	4	2	2	2	1
Mathematics 130 College Algebra: SLO #3 Solve Problems Using Sequences and series Solve problems using sequences and series.		x		4	4	2	2	2	1
Mathematics 130 College Algebra: SLO #4 Solve Application Problems Solve college algebra level application problems and use technology.		x		4	4	3	3	3	3

Course Level SLOs Minimum of 3 and maximum of 6 SLOs. <i>Include SLO #, Short Title, and SLO Statement</i> <i>Example: Math 170 SLO #3 Vectors and Complex Numbers</i>	Course to Program SLO Alignment <i>Mark with an X if you will use the course when assessing your PLO.</i>			ILOs to Course SLOs Alignment (Rate 1-4)					
	P1	P2	P3	I	II	III	IV	V	VI
Mathematics 140 Finite Mathematics for Business and Social Sciences: SLO # 1 Use of Gauss-Jordan Use the Gauss-Jordan technique to solve systems of linear equations.		x		4	4	2	2	2	1
Mathematics 140 Finite Mathematics for Business and Social Sciences: SLO #2 Use of Matrices Solve problems using matrices.		x		4	4	2	2	2	1
Mathematics 140 Finite Mathematics for Business and Social Sciences: SLO #3 Use of Geometrical Approach Solve linear programming problems using the geometrical approach.	x			4	4	2	2	2	1
Mathematics 140 Finite Mathematics for Business and Social Sciences: SLO #4 Use of Finite Mathematics Techniques Solve application problems using finite mathematics techniques	x			4	4	2	2	2	1
Mathematics 150 Elementary Statistics with Probability: SLO # 1 Computing and Interpreting Various Measures From data or bivariate data, compute statistics and develop displays of the data that illustrate the measures of central tendency, variation, relative position, and correlation. Interpret the displays in context.	x			4	4	2	2	2	1
Mathematics 150 Elementary Statistics with Probability: SLO #2 Probability Compute probability of an event by applying the basic assumption in classical probability and using addition rule and multiplication rule for contingency tables.	x	x		4	4	2	2	2	1
Mathematics 150 Elementary Statistics with Probability: SLO #3 Central Limit Theorem Use the Central Limit Theorem to compute probabilities concerning the distribution of the sample means and comparing these to the probabilities of the related random variable.	x	x		4	4	2	2	2	1
Mathematics 150 Elementary Statistics with Probability: SLO #4 Confidence Intervals and Hypothesis Testing Compute the confidence intervals and conduct hypothesis testing for a variety of parameters, and perform non-parametric hypothesis testing.	x	x		4	4	2	2	2	1

Course Level SLOs Minimum of 3 and maximum of 6 SLOs. <i>Include SLO #, Short Title, and SLO Statement</i> <i>Example: Math 170 SLO #3 Vectors and Complex Numbers</i>	Course to Program SLO Alignment <i>Mark with an X if you will use the course when assessing your PLO.</i>			ILOs to Course SLOs Alignment (Rate 1-4)					
	P1	P2	P3	I	II	III	IV	V	VI
Mathematics 160 Calculus I for the Biological, Management, and Social Sciences: SLO # 1 Determine and Interpret Limits Determine limits, classify types of continuity of functions, and determine first and second derivatives of functions.	x	x		4	4	2	2	2	1
Mathematics 160 Calculus I for the Biological, Management, and Social Sciences: SLO #2 Sketch graphs of functions Identify the intercepts, relative extrema, inflection points, and concavity, and use this information to sketch graphs of functions.	x	x		4	4	3	2	2	1
Mathematics 160 Calculus I for the Biological, Management, and Social Sciences: SLO #3 Area Problems Solve area problems using integral calculus.	x	x		4	4	2	2	2	1
Mathematics 160 Calculus I for the Biological, Management, and Social Sciences: SLO #4 Using Calculus, Solve Application Problems Solve calculus-level application problems and use technology.		x		4	4	3	2	2	1
Mathematics 161 Calculus II for the Biological, Management, and Social Sciences SLO # 1 Compute and Interpret Integrals Find integrals using a variety of methods, including: substitution, parts, and partial fractions.	x	x		4	4	2	2	2	1
Mathematics 161 Calculus II for the Biological, Management, and Social Sciences SLO # 2 Compute and Interpret Derivatives Compute and interpret partial derivatives and apply these skills to application problems	x			4	4	3	2	2	1
Mathematics 161 Calculus II for the Biological, Management, and Social Sciences SLO # 3 Convergence and Divergence of Series Determine convergence and divergence of infinite series	X	X		4	4	2	2	2	1
Mathematics 161 Calculus II for the Biological, Management, and Social Sciences SLO # 4 Solve Application Problems Using Calculus Use single-variable and double-variable integral calculus methods to solve application problems from relevant disciplines, including economics	x	x		4	4	3	2	2	1