

Mathematics Objective Rubric

Course: _____

Date: _____

Assignment: _____

Instructor: _____

Objective: *Students will demonstrate a proficiency in mathematics necessary for solving problems in physics and engineering and for advanced study in physics.*

Measure: *Student knowledge for each student learning objective in every mastery level course will be assessed by embedded questions in exams and assignments.*

Target: *Physics majors on a 5 year rolling average will score an average of at least 3.0 out of 5.0 on all Mathematics SLO's.*

Instruction: Assess each Mathematics SLO on your exam or assignment and enter the average performance score for all physics majors using a scoring system of 0 (Lowest) through 5.0 (Highest). If SLO was not assessed, mark N/A.

#	Student Learning Outcome	Score
1.	Demonstrated ability to solve regular and partial differential equations.	
2.	Demonstrated ability to solve integral equations.	
3.	Demonstrated ability to solve problems using integration techniques.	
4.	Demonstrated ability to solve physics problems using tabulated and special functions.	
5.	Demonstrated ability to solve physics problems using complex variables including contour integration.	
6.	Demonstrated ability to solve physics problems using series solution techniques (Fourier, Taylor, etc.).	
7.	Demonstrated ability to solve physics problems using integral transforms (Fourier, Laplace, etc.).	
8.	Demonstrated ability to solve extreme problems using calculus of variations.	
9.	Demonstrated ability to solve problems using vector algebra, linear algebra, matrix algebra, and vector calculus.	
10.	Demonstrated ability to solve problems using perturbation theory.	