Syllabus Review Rubric: *Analytical Reasoning and Problem Solving (ARPS)*

Learning Outcome: Upon completion of the Carolina Core, students will be able to apply the methods of mathematics, statistics, or analytical reasoning* to critically evaluate data, solve problems, and effectively communicate findings verbally and graphically.

* The phrase "analytical reasoning" is used as a generic phrase to include algorithmic, logical, mathematical, and statistical methods across disciplines.

Student Achievements (as found in the "Appendix")	**Foundational-level Course: Archetypal Syllabus Requirements**	**Integrative-level Course Syllabus Requirements**
Demonstrate understanding and use of the basic principles, concepts, and terms of the discipline	**Syllabus indicates that the course:** 1. Identifies major principles, concepts, and terminology of the discipline 2. Includes assessments (such as homework and exams) to evaluate knowledge and application of principles, concepts and terms.	**Course fulfills requirements listed for "foundational" courses, but focuses on:** 1. Examples showing how application of the principles and fundamental concepts will be applied to solve problems.
Identify a problem and define associated variables, expressing quantitative relationships among the variables. NOTE: It is not necessary in all cases to explicitly identify variables and quantitative relationships, but this needs to be addressed at a level that this information is discernible by a knowledgeable reader.	**Syllabus indicates that the course:** 1. Contains explicit examples of at least three (3) types of problems that will be solved in this course. 2. Includes mathematical (in a broad sense) modeling to define quantitative relationships among the variables. 3. Includes assessments (such as homework and exams) reinforcing skills in solving problems involving quantitative relationships among variables.	**Course fulfills requirements listed for "foundational" courses, but focuses on:** 1. Definition of measurable quantities and 2. Development of mathematical models expressing relationships among those quantities.

Apply basic quantitative methods and analytical reasoning principles to evaluate and solve problems, using appropriate technologies	**Syllabus indicates that the course:** 1. Includes descriptions of quantitative methods and/or analytical reasoning principles used to evaluate and solve problems. 2. Explicitly mentions the role of technology in carrying out the quantitative methods and analytical reasoning principles. 3. Includes assessments (such as homework and exams) to demonstrate application of methods and appropriate technology.	**Course fulfills requirements listed for "foundational" courses, but focuses on:** 1. Application of methods and reasoning principles to evaluate and solve problems.
Evaluate, interpret, and describe data from a variety of sources and in a number of forms (numbers, tables, graphs, and equations). NOTE: Data in this context should be interpreted broadly to include quantitative and qualitative information in a variety of formats.	**Syllabus for the course:** 1. Indicates data/data sources to be explored and how data can be presented. 2. Includes homework assignments and exams to demonstrate ability to evaluate, describe and interpret data.	**Course fulfills requirements listed for "foundational" courses, but focuses on:** 1. Description, evaluation and interpretation of data from a project, multi-step problem, or other similar, assignment within the major discipline