Scientific Reasoning and Laboratory Experience

From the annotated legislation:
“S-courses are those courses which further students’ understanding of the nature of scientific knowledge, of the inductive character of scientific reasoning, the desirability of scientific theories that unify a broad range of observations, and the extent to which the reliability of conclusions is influenced by the quality of those observations. These courses will be drawn predominantly from the natural sciences.”

From the annotated legislation:
“L-courses are already defined in our curriculum and registration materials: they are those courses, almost exclusively in the natural sciences, in which students must sign up for a regularly scheduled lab.”

The Checklist
- 1. This course includes elements that demonstrate the process of scientific thinking.
- 2. This course includes examinations of the ongoing development of theories, especially those used to describe the phenomena of the empirical world.
- 3. This course involves students in learning reasoning skills that enable them to derive conclusions which are based upon scientific evidence.
- 4. This course involves students in learning the skill of critiquing and evaluating scientific evidence and its limits.

To qualify for designation as a scientific reasoning course, a substantial portion of your proposed course should be designed to further students’ understanding of the process of scientific reasoning, the development of theories that unify a broad range of scientific evidence, and the extent to which the reliability of conclusions is influenced by the quality of that evidence.

At least one-fourth of the total number of hours the class meets should be devoted to laboratory or fieldwork activities.

The laboratory or fieldwork component should provide students with hands-on experience in making their own measurements or observations, engage students in evaluating the quality of data or observations, and encourage students to think critically about how conclusions can be drawn from available scientific evidence.

To designate S-courses or L-courses, fill out the respective checklist.

The SLQ committee anticipates that at least three of the checklist criteria should be met in each case.

There will also be a comment box. This is one possible place for questions.

If you check fewer than three items yet think your course should qualify as an S-course or L-course, you can use the comment box to explain your reasoning to the SLQ committee.

Note that scientific evidence as used here is defined as data collected or observations made in a systematic way.

If more than one instructor will be teaching the proposed course, all must agree on the S-course and/or L-course designation.