**Breck’s guidance on the NR Ph.D. Comprehensive Exam format and execution**

The RSENR guidelines regarding the written comps are summarized at the bottom of this message. Briefly, the form and format are largely up to the Committee. Regarding length: The primary concern is that the student is not so exhausted after addressing any one set of questions that they are not in good shape to start fresh on the next set. Thus, I recommend that individual questions should be limited ones that reasonably can be answered in an 8-10 h period, more or less. Note that this is per committee member. So each of Committee member can ask one to several questions that the student could be expected to address in one day of 8-10h length. (4 x 8 to 10 h total). Basically the exam should not take more than 7 days to answer (which I interpret to be business days).

The second matter is that all RSENR Ph.D. students should be questioned about their knowledge in four areas of science:

a) The philosophy of science;

b) Theory in his area of specialization;

c) Methods in his area of specialization;

d) Integration of social and natural science dimensions of the environment and natural resources.

The most recent interpretation of this guidance is that among all of the questions asked by the four Committee members, some aspects of these four topics should be covered. In other words, this is not a prescription that each Committee member should take one of these thematic areas and focus all of their questions only on that area. An exam could be constructed this way. An alternative would be that questions from two or more Committee members collectively cover these four topic areas. Either approach would comply with the guidelines.

It is up to the student to communicate with the Committee members directly about the general subject the matter of the question(s) each individual Committee member intends to ask. For example, the guidance to ask something about “watershed hydrology” is sufficiently detailed. Each Committee member can recommend a book or some papers to read if they wish and can determine if the student can take an open-book, open-library, open-web search approach or not. They may also dictate any formatting preferences (e.g., 12 point font, single-spaced, citations in a particular format, etc.) I suggest that the number of pages that the student is allowed to submit should be limited to no more than 10 pages excluding citations, tables, and/or figures). This is just a recommendation from me.

So here are my bottom line recommendations:

1. The student and the Committee should identify by mutual consent the general areas in which each Committee member will examine the student and ensure that among all of the questions, the “four themes” in the guidance document are covered.
2. The student, working with the Committee, should clarify the order and schedule for the delivery of each question or set of questions from each Committee member.
3. I suggest that on the evening prior to the date that the student is scheduled to address the question(s) from a particular Committee member, the member should send their question(s) and instructions to the student (and cc: the Committee) by email with instructions that they may read and think about the questions and organize their thoughts, but should not begin to write until the next day.
4. The student should submit all of their answer to all Committee members no later than say 8 pm on each exam day.
5. Committee members should commit to return an evaluation of the student’s responses within 10 business days (2 weeks). I suggest that you provide one of three levels of response:

	1. *Pass*: Only minor comments that can be dealt with in a brief private email or conversation.
	2. *Conditional Pass*: Some concerns that require attention but that do not rise to the level of a failure. A Conditional Pass should trigger a meeting between the student and the questioning Committee member. The ultimate result of a “Conditional Pass” should be either a “Pass” or a “Fail” after this meeting. Failure of any part of the exam will require that the student address that area in a manner acceptable to the Committee.
	3. *Fail*: Substantial and systemic concerns that require a meeting of the Committee to review and discuss.
6. An oral exam after the written exam is a requirement of the Ph.D. in the RSENR; i.e., it is not necessarily a punitive measure. The nature of the oral exam will be different depending on the outcome of the written exam:

	1. If the result of the written exam is a “Pass” the oral exam can be wide ranging, covering anything from the student’s proposed work, to classes, to science in general.
	2. In the case of a “Conditional Pass” that is resolved to a “Pass”, the student should be prepared to address questions from the Committee about that aspect of the written exam that was problematic. The student can and should seek guidance from the original questioner to ensure that they are adequately prepared to address the shortcomings in their written response during the oral exam.
	3. In the case of a “Fail” or a “Conditional Pass” that resolved to a “Fail”, the student will be required to retake the failed portion of the written exam and should be prepared to discuss the failed material at the oral exam.

**From RSENR Ph.D. guidelines**

A. Written Exam

1. Conducting the Exam The chair of the committee, in consultation with you and the committee members, shall specify the format of the written portion of the comprehensive examination. In no instance will the exam period be less than two days or more than seven. The committee members will specify whether you will have access to outside materials such as books, lecture notes, articles, reading notes, etc., to develop your responses. In order to encourage succinct and focused writing, committee members are encouraged to specify a maximum page length for answers to each question.
2. Content of the Exam The written exam will include questions that probe four areas:
	1. The philosophy of science;
	2. Theory in your area of specialization;
	3. Methods in your area of specialization;
	4. Integration of social and natural science dimensions of the environment and natural resources.
3. The presiding faculty member of the committee will be responsible for ensuring that these four areas are covered in the exam. A copy of the questions will be kept on file and will be available to the Graduate Faculty of the School. Grading of the Exam Each subject area will be graded pass or fail by the examiner(s) who wrote the question(s). Questions not graded within 10 days following the exam will be assumed to have been passed. All areas must be successfully completed in order to pass the written portion of the exams. You may repeat a part of the written exam that you have failed, but only once. The second exam will address only the areas you previously failed. It must take place within six months of the date of the initial exam. If the repeat exam is failed again you may file an appeal with the Graduate Standards Committee, who will make a recommendation to the dean. The dean will issue a determination regarding your status in the program.