RISC post-course survey

Respondent Information

Please type your name, email, institution, and course information. This information will be used confidentially to match pre-course data to post-course data.

Name _____

Email address _____

Institution _____

Course department and number _____

Instructor's last name _____

Gender:

- ❍ Male
- ❍ Female
- ❍ Prefer not to answer

Ethnicity:

- ❍ Alaskan Native
- ❍ American Indian
- ❍ Asian American
- ❍ Black or African American
- ❍ Filipino
- ❍ Foreign National
- ❍ Hawaiian
- ❍ Hispanic/Latino
- ❍ Pacific Islander
- ❍ White
- ❍ Two or more races
- ❍ Other
- ❍ Prefer not to answer

What is your current status?

- ❍ I am a high school student.
- ❍ I am a first-year college undergraduate.
- ❍ I am a second-year college undergraduate.
- ❍ I am a third-year college undergraduate.
- ❍ I am a fourth-year college undergraduate.
- ❍ I am a graduate or medical student.
- ❍ Other
- ❍ Not applicable / Prefer not to answer

Did you declare a major or concentration yet?

- ❍ Yes
- ❍ No

What major or concentration have you declared? Please write it here (include double majors, concentrations, etc.)

_____

_____

If you have not yet declared a major or concentration, please indicate if you considering a major/concentration in the sciences.

- ❍ Definitely yes
- ❍ It is likely
- ❍ I'm not sure
- ❍ It is unlikely
- ❍ Definitely no
- ❍ Prefer not to answer

This question is about your goals beyond your undergraduate degree. It is difficult to list all the goals people may have. The purpose of this question is to learn how many students plan to go on in science, medicine, or other fields, as well as to learn how many students do not plan to go to post-graduate education in their near future. Please choose one:

- ❍ My goal is to go to graduate school for an advanced degree in a science-related field (including biology, chemistry, physics, mathematics, computer science, and psychology).
- ❍ My goal is to go to graduate school for an advanced degree in a social science (including sociology, anthropology, economics, and political science).
- ❍ My goal is to go to graduate school for an advanced degree in humanities or fine arts.
- ❍ My goal is earn a certification or degree that will qualify me for teaching.
- ❍ My goal is to go to school for a medical degree (M.D.).
- ❍ My goal is to go to a type of graduate education not mentioned above, such as law school.
- ❍ My goal does not include graduate education for at least the near future.
- ❍ Not applicable/Prefer not to answer.

The next question is about how the experience of this course influenced your plans about post-graduate education.

After taking this course,

- ❍ I have not considered any post-graduate education.
- ❍ I now plan not to pursue post-graduate education.
- ❍ I now plan to pursue a Master's degree in a science-related field.
- ❍ I now plan to pursue a Doctoral degree in a science-related field.
- ❍ I now plan to pursue a Master's degree in a field other than science.
- ❍ I now plan to pursue a Doctoral degree in a field other than science.
- ❍ I now plan to pursue a medical degree.
- ❍ I now plan to pursue a law, architectural, or other degree.
- ❍ Not applicable / Prefer not to answer.

Course Elements

Please rate how much learning you gained from each element you experienced in this course. The scale measuring your gain is from (no or very small gain) to (very large gain). Some elements may not have happened at all. If the item is not relevant or you prefer not to answer, please choose the "not applicable" option.

Level of gained experience

	None or very small gain	Small gain	Moderate gain	Large gain	Very large gain	N/A or Prefer not to answer
Working on a scripted lab or problem in which the students know the expected outcome.	❍	❍	❍	❍	❍	❍
Working on a lab or problem in which only the instructor knows the outcome.	❍	❍	❍	❍	❍	❍
Working on problems that have no clear solution.	❍	❍	❍	❍	❍	❍
Working on at least one problem that is assigned and structured by the instructor.	❍	❍	❍	❍	❍	❍
Working on a problem in which the students have some input into the research process and/or what is being studied.	❍	❍	❍	❍	❍	❍
Working on a project or problem entirely of student's own design.	❍	❍	❍	❍	❍	❍
Working individually.	❍	❍	❍	❍	❍	❍
Connecting your personal experience to the course problem or problems.	❍	❍	❍	❍	❍	❍
Working in small groups or teams.	❍	❍	❍	❍	❍	❍

	None or very small gain	Small gain	Moderate gain	Large gain	Very large gain	N/A or Prefer not to answer
Learning that the use of disciplinary knowledge needs to be accurate and fair.	❍	❍	❍	❍	❍	❍
Reading primary scientific literature within one field or discipline.	❍	❍	❍	❍	❍	❍
Receiving assigned coursework from more than one discipline or area of study.	❍	❍	❍	❍	❍	❍
Collecting data.	❍	❍	❍	❍	❍	❍
Analyzing data.	❍	❍	❍	❍	❍	❍
Learning that disciplines may approach problems in different and sometimes conflicting ways.	❍	❍	❍	❍	❍	❍
Presenting intellectual work in written papers or reports.	❍	❍	❍	❍	❍	❍
Presenting intellectual work in posters.	❍	❍	❍	❍	❍	❍
Using instruments or materials borrowed from another discipline or field of study.	❍	❍	❍	❍	❍	❍
Critiquing the work of other students.	❍	❍	❍	❍	❍	❍
Listening to lectures.	❍	❍	❍	❍	❍	❍
Working with students who major (or probably intend to major) in other disciplines or fields of study.	❍	❍	❍	❍	❍	❍
Learning to find similarities and differences between disciplines or fields of study.	❍	❍	❍	❍	❍	❍
Working on problem sets.	❍	❍	❍	❍	❍	❍
Taking tests in class.	❍	❍	❍	❍	❍	❍
Working on defining a problem and refining the definition while solving the problem.	❍	❍	❍	❍	❍	❍
Engaging in class discussion.	❍	❍	❍	❍	❍	❍
Maintaining lab notebooks.	❍	❍	❍	❍	❍	❍
Working on a problem that requires integrating ideas from two or more sciences.	❍	❍	❍	❍	❍	❍
Studying an interdisciplinary problem.	❍	❍	❍	❍	❍	❍
Spending the entire course on one or a few problems.	❍	❍	❍	❍	❍	❍

	None or very small gain	Small gain	Moderate gain	Large gain	Very large gain	N/A or Prefer not to answer
Reading a textbook.	❍	❍	❍	❍	❍	❍
Working on a problem that requires integrating ideas from both science and non-science disciplines.	❍	❍	❍	❍	❍	❍
Attempting a complete understanding of a complex problem.	❍	❍	❍	❍	❍	❍
Learning to ask "big questions" that implicate more than one discipline in a solution.	❍	❍	❍	❍	❍	❍
Talking with faculty members from other disciplines or fields of study.	❍	❍	❍	❍	❍	❍
Reading primary literature from multiple disciplines or fields of study.	❍	❍	❍	❍	❍	❍
Presenting intellectual work orally.	❍	❍	❍	❍	❍	❍
Becoming responsible for a part of a project.	❍	❍	❍	❍	❍	❍
Learning to translate the specialized language of a discipline into the language of other disciplines.	❍	❍	❍	❍	❍	❍
Writing a research proposal.	❍	❍	❍	❍	❍	❍
Learning about two (or more) disciplines so that new insights emerge from considering them together.	❍	❍	❍	❍	❍	❍
Working together with other students as a whole class.	❍	❍	❍	❍	❍	❍
Judging the relative contribution of disciplines to the solution of a problem.	❍	❍	❍	❍	❍	❍
Creating new metaphors, analogies, or models to understand problems.	❍	❍	❍	❍	❍	❍
Learning computer modeling of complex systems.	❍	❍	❍	❍	❍	❍
Studying problems with multiple causes that operate simultaneously and interactively.	❍	❍	❍	❍	❍	❍
Engaging in experiential learning in the course.	❍	❍	❍	❍	❍	❍
Calling upon your personal values to motivate the study of the problem or problems.	❍	❍	❍	❍	❍	❍

Benefits

In this section of the survey you will be asked to consider a variety of possible benefits you may have gained from your research experience. If for any reason you prefer not to answer, or consider the question irrelevant to you, please choose the "Not applicable / Prefer not to answer" option.

	No gain or very small gain	**Small gain**	**Moderate gain**	**Large gain**	**Very large gain**	**N/A or Prefer not to answer**
Clarification of a career path	❍	❍	❍	❍	❍	❍
Skill in the interpretation of results	❍	❍	❍	❍	❍	❍
Tolerance for obstacles faced in the research process	❍	❍	❍	❍	❍	❍
Readiness for more demanding research	❍	❍	❍	❍	❍	❍
Understanding how knowledge is constructed	❍	❍	❍	❍	❍	❍
Understanding of the research process in your field	❍	❍	❍	❍	❍	❍
Ability to integrate theory and practice	❍	❍	❍	❍	❍	❍
Understanding of how scientists work on real problems	❍	❍	❍	❍	❍	❍
Understanding that scientific assertions require supporting evidence	❍	❍	❍	❍	❍	❍
Ability to analyze data and other information	❍	❍	❍	❍	❍	❍
Understanding science	❍	❍	❍	❍	❍	❍
Learning ethical conduct in your field	❍	❍	❍	❍	❍	❍
Learning laboratory techniques	❍	❍	❍	❍	❍	❍
Ability to read and understand primary literature	❍	❍	❍	❍	❍	❍
Skill in how to give an effective oral presentation	❍	❍	❍	❍	❍	❍
Skill in science writing	❍	❍	❍	❍	❍	❍
Self-confidence	❍	❍	❍	❍	❍	❍
Understanding of how scientists think	❍	❍	❍	❍	❍	❍
Learning to work independently	❍	❍	❍	❍	❍	❍
Becoming part of a learning community	❍	❍	❍	❍	❍	❍
Confidence in my potential to be a teacher of science	❍	❍	❍	❍	❍	❍

Overall evaluation

For each item below please rate your own agreement with the item.

	Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**	**Not applicable / Prefer not to answer**
This course was a good way of learning about the subject matter.	❍	❍	❍	❍	❍	❍
This course was a good way of learning about the process of scientific research.	❍	❍	❍	❍	❍	❍
This course had a positive effect on my interest in science.	❍	❍	❍	❍	❍	❍
I was able to ask questions in this class and get helpful responses.	❍	❍	❍	❍	❍	❍

Your opinions about science

In the pretest you responded to questions about science. Below the questions are posed again. Your answers will help us decide between two hypotheses, that the opinions are reliable over time (test-retest reliability) or that the opinions change as a result of your experience.

For each item below please rate your agreement with the item.

	Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**	**N/A**
Even if I forget the facts, I'll still be able to use the thinking skills I learn in science.	❍	❍	❍	❍	❍	❍
The process of writing in science is helpful for understanding scientific ideas.	❍	❍	❍	❍	❍	❍
I wish science instructors would just tell us what we need to know so we can learn it.	❍	❍	❍	❍	❍	❍
Creativity does not play a role in science.	❍	❍	❍	❍	❍	❍
Science is not connected to non-science fields such as history, literature, economics, or art.	❍	❍	❍	❍	❍	❍
I get personal satisfaction when I solve a scientific problem by figuring it out myself.	❍	❍	❍	❍	❍	❍
Science is essentially an accumulation of facts, rules, and formulas.	❍	❍	❍	❍	❍	❍
I can do well in science courses.	❍	❍	❍	❍	❍	❍
There is too much emphasis in science classes on figuring things out for yourself.	❍	❍	❍	❍	❍	❍
Explaining science ideas to others has helped me understand the ideas better.	❍	❍	❍	❍	❍	❍
If an experiment shows that something doesn't work, the experiment was a failure.	❍	❍	❍	❍	❍	❍