# RISC pre-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:
O Male
O Female
O Prefer not to answer
Ethnicity:
O Alaskan Native
O American Indian
O Asian American
O Black or African American
O Filipino
O Foreign National
O Hawaiian
O Hispanic/Latino O Pacific Islander
O White
O Two or more races
O Other
O Prefer not to answer

What is your current status?
<ul> <li>I am a high school student.</li> <li>I am a first-year college undergraduate.</li> <li>I am a second-year college undergraduate.</li> <li>I am a third-year college undergraduate.</li> <li>I am a fourth-year college undergraduate.</li> <li>I am a graduate or medical student.</li> <li>Other</li> <li>Not applicable / Prefer not to answer</li> </ul>
Did you declare a major or concentration yet?
O Yes O 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.
<ul> <li>Definitely yes</li> <li>It is likely</li> <li>I'm not sure</li> <li>It is unlikely</li> <li>Definitely no</li> <li>Prefer not to answer</li> </ul>
<b>This question is about your goals beyond your undergraduate degree.</b> 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:
<ul> <li>O 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).</li> <li>O My goal is to go to graduate school for an advanced degree in a social science (including sociology, anthropology, economics, and political science).</li> <li>O My goal is to go to graduate school for an advanced degree in humanities or fine arts.</li> <li>O My goal is earn a certification or degree that will qualify me for teaching.</li> <li>O My goal is to go to school for a medical degree (M.D.).</li> <li>O My goal is to go to a type of graduate education not mentioned above, such as law school.</li> <li>O My goal does not include graduate education for at least the near future.</li> <li>O Not applicable/Prefer not to answer.</li> </ul>

## **Course Elements**

Please look over this inventory of elements that might be included in a course. For each element, give an estimate of your current level of ability before the course begins.

Level of experience

	None or	N/A or				
	very small gain	gain	gain	Large gain	large gain	Prefer not to answer
Working on a scripted lab or problem in which the students know the expected outcome.	0	•	0	•	0	0
Working on a lab or problem in which only the instructor knows the outcome.	0	<b>O</b>	•	<b>O</b>	<b>O</b>	0
Working on problems that have no clear solution.	0	•	0	•	0	0
Working on at least one problem that is assigned and structured by the instructor.	0	<b>O</b>	0	<b>O</b>	0	•
Working on a problem in which the students have some input into the research process and/or what is being studied.	O	0	O	•	•	O
Working on a project or problem entirely of student's own design.	0	<b>O</b>	0	•	0	0
Working individually.	<b>O</b>	<b>O</b>	<b>O</b>	0	O	O
Connecting your personal experience to the course problem or problems.	0	<b>O</b>	0	•	0	0
Working in small groups or teams.	<b>O</b>	0	<b>O</b>	0	O	0
Learning that the use of disciplinary knowledge needs to be accurate and fair.	0	<b>O</b>	0	0	0	•
Reading primary scientific literature within one field or discipline.	0	•	0	•	0	0
Receiving assigned coursework from more than one discipline or area of study.	•	0	0	0	0	•
Collecting data.	O	O	<b>O</b>	O	O	O
Analyzing data.	O	O	<b>O</b>	O	O	0
Learning that disciplines may approach problems in different and sometimes conflicting ways.	0	0	0	0	0	•

	None or very small gain	Small gain	Moderate gain	Large gain	Very large gain	N/A or Prefer not to answer
Presenting intellectual work in written papers or reports.	O	<b>O</b>	0	O	0	0
Presenting intellectual work in posters.	0	0	0	•	0	0
Using instruments or materials borrowed from another discipline or field of study.	0	0	0	0	0	0
Critiquing the work of other students.	0	0	0	0	0	0
Listening to lectures.	0	0	<b>O</b>	O	O	<b>O</b>
Working with students who major (or probably intend to major) in other disciplines or fields of study.	0	O	0	<b>O</b>	0	0
Learning to find similarities and differences between disciplines or fields of study.	•	<b>O</b>	0	•	0	0
Working on problem sets.	<b>O</b>	0	<b>O</b>	0	O	0
Taking tests in class.	O	0	0	O	O	0
Working on defining a problem and refining the definition while solving the problem.	•	•	•	0	•	•
Engaging in class discussion.	O	<b>O</b>	<b>O</b>	<b>O</b>	O	0
Maintaining lab notebooks.	O	O	O	O	O	0
Working on a problem that requires integrating ideas from two or more sciences.	•	•	•	0	0	0
Studying an interdisciplinary problem.	0	0	0	0	0	0
Spending the entire course on one or a few problems.	0	0	0	0	0	0
Reading a textbook.	<b>O</b>	•	<b>O</b>	0	O	0
Working on a problem that requires integrating ideas from both science and non-science disciplines.	•	•	•	•	•	0
Attempting a complete understanding of a complex problem.	•	0	•	0	•	0
Learning to ask "big questions" that implicate more than one discipline in a solution.	<b>O</b>	O	<b>O</b>	O	0	0

	None or very small gain	Small gain	Moderate gain	Large gain	Very large gain	N/A or Prefer not to answer
Talking with faculty members from other disciplines or fields of study.	0	<b>O</b>	0	<b>O</b>	0	O
Reading primary literature from multiple disciplines or fields of study.	0	•	0	•	0	0
Presenting intellectual work orally.	O	0	<b>O</b>	•	O	O
Becoming responsible for a part of a project.	0	•	0	0	O	O
Learning to translate the specialized language of a discipline into the language of other disciplines.	0	<b>O</b>	0	•	0	0
Writing a research proposal.	<b>O</b>	<b>O</b>	<b>O</b>	<b>O</b>	O	0
Learning about two (or more) disciplines so that new insights emerge from considering them together.	O	0	0	0	<b>O</b>	0
Working together with other students as a whole class.	0	<b>O</b>	0	<b>O</b>	O	O
Judging the relative contribution of disciplines to the solution of a problem.	0	<b>O</b>	0	<b>O</b>	0	0
Creating new metaphors, analogies, or models to understand problems.	0	•	0	•	O	0
Learning computer modeling of complex systems.	0	<b>O</b>	0	0	0	0
Studying problems with multiple causes that operate simultaneously and interactively.	0	<b>O</b>	0	<b>O</b>	0	0
Engaging in experiential learning in the course.	0	•	0	•	0	0
Calling upon your personal values to motivate the study of the problem or problems.	O	<b>O</b>	0	O	<b>O</b>	O

## Your opinions about yourself and about science

It has become common to say that no student is an empty bucket, waiting for a teacher to pour in knowledge. Research on learning acknowledges that students approach a course with well-formed opinions of themselves and of the subject matter. In this section we present questions about science and questions about you. These will help us put learning in context.

### 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.	<b>O</b>	0	•	•	0	<b>O</b>
The process of writing in science is helpful for understanding scientific ideas.	<b>O</b>	0	<b>O</b>	<b>O</b>	0	<b>O</b>
I wish science instructors would just tell us what we need to know so we can learn it.	<b>O</b>	0	<b>O</b>	•	0	<b>O</b>
Creativity does not play a role in science.	<b>O</b>	<b>O</b>	0	<b>O</b>	<b>O</b>	O
Science is not connected to non-science fields such as history, literature, economics, or art.	<b>O</b>	0	<b>O</b>	•	0	<b>O</b>
I get personal satisfaction when I solve a scientific problem by figuring it out myself.	<b>O</b>	0	•	•	0	<b>O</b>
Science is essentially an accumulation of facts, rules, and formulas.	0	0	0	0	0	O
I can do well in science courses.	<b>O</b>	0	0	•	0	O
There is too much emphasis in science classes on figuring things out for yourself.	0	0	<b>O</b>	<b>O</b>	0	<b>O</b>
Explaining science ideas to others has helped me understand the ideas better.	•	0	0	0	0	<b>O</b>
If an experiment shows that something doesn't work, the experiment was a failure.	<b>O</b>	0	•	0	0	0

### **Paired Statements**

Below are ten pairs of statements. The number scale between them is used to indicate how well a statement or a pair of statements describes you. For example, on the first pair, a "6" would indicate you are very action oriented, while a "4" would indicate you were more action-oriented than reflective, but somewhat reflective. For each pair of statements, choose a number that indicates how well the statement describes you. Do not worry that some pairs are not opposite.

#### Responses

#### Scale

Scale										
	1	2	3	4	5	6	NA			
I would describe myself as reflective.	0	0	0	0	0	0	0	I would describe myself as action oriented.		
I prefer subjects with precise answers.	O	0	0	O	O	0	<b>O</b>	I prefer subjects with multiple interpretations.		
I value patience.	0	0	0	0	0	0	0	I value getting things done.		
I like things to be varied and colorful.	0	0	0	0	0	0	0	I like to be exact and precise.		
I would describe myself as a doer.	O	0	0	O	O	0	0	I would describe myself as an observer.		
I take a creative and imaginative approach to solving problems.	O	0	O	O	O	O	0	I take a precise and calculated approach to solving problems.		
I would describe myself as evaluative and logical.	O	O	O	O	O	O	0	I would describe myself as receptive and accepting.		
I like to watch what is going on.	O	0	0	O	O	0	•	I like to see the results of my actions.		
I strive for versatility.	O	O	O	O	O	O	O	I strive for accuracy.		
I am reserved.	O	C	C	O	O	C	O	I am prepared.		
I prefer solving problems that can be clearly described and have a clear solution	O	O	O	O	O	O	0	I prefer solving problems that have no clear description and no clear solution		

## **S**kills

Finally, please think of how you place yourself relative to your fellow students at your institution. Use this scale to indicate your skills relative to your peers:

### Level of skill

	I am in the lowest 10%	Not the lowest but below average	Average	Not the highest but above average	I am in the highest 10%	N.A. / Prefer not to answer
Creativity	<b>O</b>	<b>O</b>	O	<b>O</b>	O	<b>O</b>
Leadership	<b>O</b>	<b>O</b>	O	<b>O</b>	O	<b>O</b>
Participation in class discussions	0	0	0	0	0	0
Skill in setting realistic yet challenging goals for myself	0	•	0	0	0	0
Understanding others	O	<b>O</b>	<b>O</b>	<b>O</b>	<b>O</b>	O
Writing skill	<b>O</b>	O	O	<b>O</b>	O	O
Skill in accurately estimating the time it takes to complete assignments	O	O	O	O	O	O
Working with a student group or team	0	0	•	0	•	0
Mathematical skill	0	O	0	0	O	0