

## Appendix 1: Survey Instruments

2009 Pilot Survey Instrument	p. 1
2009 Survey Instrument for QR Takers	p. 4
2008 Survey Instrument for Comparison Group	p. 7

### 2009 Pilot Survey Instrument

In Summer 2009, you were enrolled in [Course], which fulfills the LSA Quantitative Reasoning requirement. Please give us your feedback on this course. At the end of the confidential survey, we also will ask your feedback on the survey itself. Those who respond by Wednesday, September 1, will be entered into a drawing for a \$100 Visa gift card. Please contact Mary Wright, Center for Research on Learning and Teaching, if you have any questions.

#### **1. What were your reasons for enrolling in Math 116? (Please check ALL that apply.)**

- To fulfill the LSA Quantitative Reasoning requirement
- To fulfill requirements of my major/minor
- Personal interest with topic
- To complete a course that might be relevant to a future field of study (e.g., a future major/minor)
- To complete a prerequisite for another course I plan to take
- Other (please specify):

#### **2. Compared to when I started course], I am now BETTER able to:** [Scale for all items is Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree]

Recognize logically sound arguments

Use quantitative information to evaluate an argument

Understand the difference between correlation and causation

Solve problems using arithmetic, algebra or statistics

Understand randomness, uncertainty and risk

Use statistics to evaluate factual claims

Understand charts and graphs showing quantitative information

Express ideas using quantitative information

Recognize when arguments use evidence well

Know when it is valid to infer that one thing causes another

Understand rates and percentages

Understand how data can be used to test a hypothesis

Use quantitative information to solve problems

Solve problems using formal logic

**3. Please DESCRIBE AN EXAMPLE of the way in which you leave [course] being BETTER able to use and analyze quantitative information.**

**4. The goal of LSA's Quantitative Reasoning requirement is to ensure that every graduate of the College achieves a certain level of proficiency in working with numerical data to:**

- Solve problems (e.g., compute a math problem)
- Make judgments and predictions (e.g., use formulas to predict a trend or chemical reaction)
- Understand real-world uses of numerical data (e.g., understand a graph in a newspaper article)

**Overall, I believe [course] met the goals of the Quantitative Reasoning requirement.** *(Please circle one.)*

Strongly Agree     Agree     Neutral     Disagree     Strongly Disagree

Please explain:

**5. Which of the following activities in Math 116 contributed to your being able to use and analyze quantitative information?** (Please check ALL that apply.)

- Listening to lectures
- Listening to explanations from your GSI in section
- Participating in group work in class
- Being part of a homework group outside of class
- Completing regular problem sets
- Solving real-world problems
- Receiving feedback on your homework

- Receiving feedback on your exams/quizzes
- Reviewing your notes
- Preparing for exams
- Asking questions in office hours
- Other (please specify):

For the activities that you checked, please explain HOW they contributed to your learning.

**6. Please give us your feedback on this survey.**

[Scale for all items is Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree]

I was able to understand the survey *directions*.

I was able to understand the survey *questions*.

The survey's *length* was appropriate.

I understood how this survey explained LSA's goals for the Quantitative Reasoning requirement.

**7. Please complete this sentence.**

*When I think about my experience with the LSA Quantitative Reasoning requirement, what I really wish this survey had asked me about is...*

**8. Any other comments on the survey?**

Thank you for your feedback on the LSA Quantitative Reasoning requirement and this survey.

## **2009 Survey Instrument for QR Takers**

In Fall 2009, you were enrolled in [Course], which fulfills the LSA Quantitative Reasoning requirement. Please give us your feedback on this course. This is a confidential survey.

Please contact Dr. Mary Wright, Center for Research on Learning and Teaching, if you have any questions.

### **1. What were your reasons for enrolling in [course]? (Please check ALL that apply.)**

- To fulfill the LSA Quantitative Reasoning requirement
- To fulfill requirements of my major/minor
- Personal interest with topic
- To complete a course that might be relevant to a future field of study (e.g., a future major/minor)
- To complete a prerequisite for another course I plan to take
- Other (please specify):

### **2. Are you able to DESCRIBE AN EXAMPLE of the way in which you leave [Course] being BETTER able to use and analyze quantitative information?**

- NO
- YES (and please describe your example here):

### **3. Compared to when I started the Fall Term, I am now BETTER able to:**

*[Scale for all items is Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree]*

Recognize logically sound arguments

Use quantitative information to evaluate an argument

Understand the difference between correlation and causation

Solve problems using arithmetic, algebra or statistics

Understand randomness, uncertainty and risk

Use statistics to evaluate factual claims

Understand charts and graphs showing quantitative information

Express ideas using quantitative information

Recognize when arguments use evidence well

Know when it is valid to infer that one thing causes another

Understand rates and percentages

Understand how data can be used to test a hypothesis

Use quantitative information to solve problems

Solve problems using formal logic

**4. The goal of LSA's Quantitative Reasoning requirement is to ensure that every graduate of the College achieves a certain level of proficiency in working with numerical data to:**

- Solve problems (e.g., compute a math problem)
- Make judgments and predictions (e.g., use formulas to predict a trend or chemical reaction)
- Understand real-world uses of numerical data (e.g., understand a graph in a newspaper article)

**Overall, I believe [course] met the goals of the Quantitative Reasoning requirement.** *(Please circle one.)*

Strongly Agree

Agree

Neutral

Disagree

Strongly Disagree

Please explain:

**5. If LSA did not have a Quantitative Reasoning requirement, would you still plan to take a course at U-M that met these goals?**

Yes

No

Don't Know

**6. Which of the following activities in [course] contributed to your being able to use and analyze quantitative information? (PLEASE CHECK ALL THAT APPLY.)**

**Studying Course Material:**

Listening to lectures

Reviewing your notes

- Visiting the Science Learning Center
- Visiting the Math Lab
- Preparing for exams

**Interaction with Instructors:**

- Listening to explanations from your GSI in section
- Asking questions in office hours
- Receiving feedback on your homework
- Receiving feedback on your exams/quizzes

**Homework & Activities:**

- Participating in group work in class
- Being part of a homework group outside of class
- Completing regular problem sets
- Solving real-world problems

**Other (please specify):**

**7. For the activities that you checked, please explain HOW they contributed to your learning.**

**8. Any other comments about the QR requirement?**

Thank you for your feedback on the LSA Quantitative Reasoning requirement.

## **2009 Survey Instrument for Comparison Group (Non-QR Takers)**

You have been selected to provide feedback on your experiences with your courses at the University for Fall 2009, regarding how these courses developed certain quantitative reasoning skills. Please give us your feedback on your fall courses. This is a confidential survey.

Please contact Dr. Mary Wright, Center for Research on Learning and Teaching, if you have any questions.

**1. Compared to when I started the Fall Term, I am now BETTER able to:**  
[Scale for all items is Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree]

Recognize logically sound arguments

Use quantitative information to evaluate an argument

Understand the difference between correlation and causation

Solve problems using arithmetic, algebra or statistics

Understand randomness, uncertainty and risk

Use statistics to evaluate factual claims

Understand charts and graphs showing quantitative information

Express ideas using quantitative information

Recognize when arguments use evidence well

Know when it is valid to infer that one thing causes another

Understand rates and percentages

Understand how data can be used to test a hypothesis

Use quantitative information to solve problems

Solve problems using formal logic

**Thank you for your feedback on your Fall Term courses.**