Quantitative Literacy [Q] Designation Approval

Student Name: _____   ID:_____

A transfer course that is deemed by Bates to be equivalent to an existing Bates course automatically carries the same general education credit as does the equivalent course at Bates. Therefore, if the equivalent course at Bates carries [Q] credit, this form is not needed.

Students seeking "Quantitative Literacy" [Q] general education credit for a course that is NOT equivalent to a Bates course should ask the chair of the relevant Bates department or program to complete this form based on course materials and descriptions provided by the student. The student should then submit the completed form to the Registrar's office. The Bates SLQ committee will make the final determination of whether [Q] credit is granted for the transfer course.

> Q-courses devote significant attention to quantitative reasoning. Broadly speaking, this involves teaching students to understand and evaluate quantitative arguments, and helping them develop the ability to apply quantitative skills to solve problems in multiple contexts. Quantitative reasoning occurs across many fields; it is data-based and anchored in context.
>
> The following list includes many types of skills and outcomes possible in a Q-course. The Scientific Reasoning and Quantitative Literacy Committee anticipates that courses satisfying eight or more list items will readily qualify as Q-courses. Please check each skill or outcome included in the course. If you check fewer than eight, yet believe the course should still qualify as a Q-course, please explain in the comments area below.

Arithmetic

☐   1. Having facility with simple mental arithmetic

☐   2. Estimating arithmetic calculations

☐   3. Reasoning with proportions

Data

☐   4. Using information conveyed as quantitative data, graphs, and charts

☐   5. Drawing inferences from quantitative data

☐   6. Recognizing sources of error in collected quantitative data

Computers

☐   7. Using spreadsheets to record data

☐   8. Using spreadsheets to perform calculations

☐   9. Fitting lines or curves to data, or creating graphic displays of data

☐   10. Extrapolating from data

Modeling

☐   11. Formulating quantitative problems, seeking patterns, and drawing conclusions

☐   12. Recognizing interactions in complex systems

☐   13. Understanding linear, exponential, multivariate, and simulation models

☐   14. Understanding the impact of different rates of growth

-over-

Statistics

☐ 15. Understanding the importance of variability

☐ 16. Recognizing the difference between correlation and causation

☐ 17. Recognizing the difference between randomized experiments and observational studies

☐ 18. Recognizing the difference between finding no effect and finding no statistically significant effect (especially with small samples)

☐ 19. Recognizing the difference between statistical significance and practical importance (especially with large samples)

Chance

☐ 20. Recognizing that seemingly improbable coincidences are not uncommon

☐ 21. Evaluating risks from available evidence

☐ 22. Understanding the value of random samples

Intended Outcomes for Students

☐ 23. Comfortable with quantitative ideas and at ease applying quantitative methods

☐ 24. Routine use of mental estimates to quantify, interpret, and check other information

☐ 25. Understanding the role of mathematics and statistics in scientific inquiry and technological progress

☐ 26. Understanding the role of mathematics and statistics in comprehending issues in the public realm

☐ 27. Analyzing quantitative evidence and reasoning carefully

☐ 28. Questioning assumptions and recognizing quantitative fallacies

☐ 29. Using mathematical tools in context-based settings

☐ 30. Adapting to changes in notation, problem-solving strategies, and performance standards, depending on the specific context

☐ 31. Having accurate intuition about the meaning of numbers and common sense about employing numbers as a measure of things

☐ 32. Knowing how to solve quantitative problems they are likely to encounter at home and at work

Comments: _____

_____

_____

_____   _____   _____
Signature - Department/Program Chair   Dept/Prog   Date

_____   __S,L,Q Committee__   _____
Signature – S,L,Q Committee   Committee   Date