Quantitative Reasoning for Professionals

An Inquiry-Based Approach

Quantitative Reasoning for Professionals is a two-semester hybrid algebra/QR sequence under development at Ferris State University. The course is designed to use inquiry-based learning. The materials require students to carefully and critically construct and apply course content. Other features of the course include the use of spreadsheets, writing across the curriculum, and consideration of ethical issues arising out of the mathematics. Content is at the introductory/intermediate algebra level.

We are interested in sharing our materials and consulting with faculty to develop similar courses that fit your local needs. Together we can form a community dedicated to student success through innovations in curriculum and instruction!

Course Content at Ferris State University

Semester 1 (Developmental)	Semester 2 (Gateway)
Data-Driven Professional Decisions	Linear Functions
Proportional Reasoning	Exponential Functions
Constructing and Interpreting Formulas	Logarithms
Manipulating Formulas	Linear Analysis

Some Sample Problems:

- Design a mathematical process to use nightly data to measure fry efficiency and program it into Excel.
- How long does it take to pay off your credit card?
- Solve an exponential supply and demand system.
- What is the average growth rate of the US federal debt?

The Future at Ferris State University:

The course is currently designed for business students. With a grant from the National Science Foundation, we will roll out an expanded version of the course in Fall 2018 which brings together students in business, nursing, and social work. The expansion will be the result of collaboration among math, nursing, and social work faculty. We will add **simulations** and **case studies** to the current materials to increase authenticity.

We will also develop professional development workshops to help faculty teach this course for the first time.

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Student Quotes

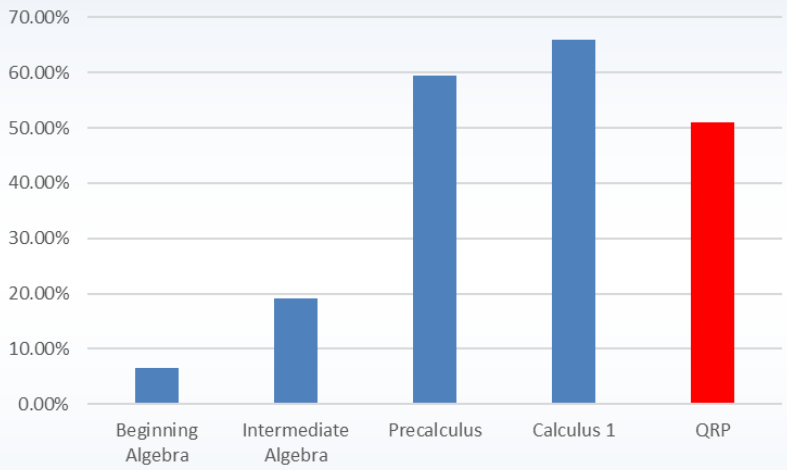
"I realized the reasoning behind equations, what it meant and how people put them together."

"You converted a person who loathed math into someone who finally understands it."

"Thank you for making me a math person!"

Data - Skill Growth Example.

Percent correctly solving $L=[(Q/G)-12]^2$ for Q



Data - Conquering Math Anxiety!

Students in Beginning Algebra had an average decline in math anxiety of 1.28% (*n* = 289). In Intermediate Algebra, the average decline in math anxiety was 1.78% (*n* = 743).

Students in QRP 1 had an average decline in math anxiety of **4.2%** (*n* = 112).

(Measured with Suinn and Winston's Math Anxiety Rating Scale, Short Version).

For more information or to get involved, contact Victor Piercey at Ferris State University:

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