

OFFICIAL SYLLABUS
QR 101 – QUANTITATIVE REASONING
Adopted – Spring 2014 (Committee: E. Sewell, K. Stuart, C. Traub)
Effective – Summer 2014

Catalog Description:

Focuses on mathematical reasoning and real-life problems. Including management science, coding, social choice and decision making, size and shape, and modeling.

Textbook:

Math in Our World (Third Edition) with Connect and Learn Smart
Dave Sobecki and Allan G Bluman
ISBN 978-0-07-351967-8
MHID 0-07-351968-7

Course Outline and Topics:

Chapter 8: Consumer Math

- 8-1 Percents
- 8-2 Simple Interest
- 8-3 Compound Interest
- 8-4 Installment Buying
- 8-5 Student Loans and Home Buying
- 8-6 Investing in Stocks and Bonds

Chapter 9: Measurement

- 9-1 Measures of Length: Converting Units and the Metric System
- 9-2 Measures of Area, Volume, and Capacity
- 9-3 Measures of Weight and Temperature

Chapter 10: Geometry

- 10-1 Points, Lines, Planes, and Angles
- 10-2 Triangles
- 10-3 Polygons and Perimeter
- 10-4 Areas of Polygons and Circles
- 10-5 Volume and Surface Area
- 10-6 Right Triangle Trigonometry

Chapter 12: Statistics

- 12-1 Gathering and Organizing Data
- 12-2 Picturing Data
- 12-8 Correlation (not the parts calculating the correlation coefficient)
- Supplement: Misuses of Statistics

Chapter 13: Voting Methods

- 13-1 Preference Tables and the Plurality Method
- 13-2 The Borda Count Method and Plurality-with-Elimination Method
- 13-3 The Pairwise Comparison Method and Approval Voting
- 13-4 Apportionment
- 13-5 Apportionment Flaws

Learning Objectives:

After completion of the course, students will be able to

- Interpret mathematical models such as formulas, graphs, tables and schematics, and draw inferences from them
- Represent mathematical information symbolically, visually, numerically, and verbally
- Use arithmetical, algebraic, geometric, and statistical methods to solve problems including, but not limited to personal budgeting, finances, savings, investments, taxes, voting systems, and various social issues
- Estimate and check answers to mathematical problems in order to determine reasonableness, identify alternatives, and select optimal results
- Recognize errors and abuses of numbers
- Recognize the limitations of mathematics and statistics

Any instructor should cover all the above material. Additional sections and chapters are optional.