MTH 098 : MATH LITERACY

Transcript title

Math Literacy

Credits

4

Grading mode

Standard letter grades

Total contact hours

60

Lecture hours

30

Lab hours

30

Recommended preparation

MTH 015 or minimum placement in Math Level 7.

Course Description

Builds on MTH 015 to present mathematics in the context of "math you encounter in your daily life". Introduces and applies pattern recognition, estimation and number sense, working with units, negative numbers, order of operations, and using basic equations and formulas. Explores how to clearly communicate arguments supported by quantitative evidence using words, tables, graphs, and when appropriate, equations and mathematical models.

Course learning outcomes

1. Use fractions, percents, ratios and decimals in an applied setting.
2. Develop rationale for and utilize unit arithmetic, including dimensional analysis, in context.
3. Glean data from and create graphical and tabular displays of information.
4. Use order of operations in context, including with signed numbers.
5. Recognize the need for and apply formulas and mathematical models when appropriate.

Content outline

KEY: Theme • Student Learning Outcome • Concepts Fractions, Percents, Ratios, Decimals • Use fractions, percents, ratios and decimals in an applied setting. • Convert among fractions, decimals, and percentages • Solve applied problems involving ratios, rates, percentages, and proportions Units • Develop rationale for and utilize unit arithmetic, including dimensional analysis, in context. • Use customary and metric units for measurement and calculation • Convert from any unit to any other appropriate unit using dimensional analysis • Convert any rate into "x per 1" or "1 per x" (unit rate) format, and use the results to compare rates Graphical Displays • Glean data from and create graphical and tabular displays of information. • Read and interpret tables, bar graphs, scatterplots, line graphs, and pie charts (and additional graphical displays as desired) • Determine the graphical display best suited to a data set

• Create tables, bar graphs, scatterplots, line graphs, and pie charts by hand (with pencil and paper) • Use technology such as Excel to create tables and scatterplots (and additional graphical displays as desired) Order of Operations • Use order of operations in context, including with signed numbers. • Use correct order of operations to simplify expressions, including those involving signed numbers, as they apply to data-based/statistical/probabilistic applications Formulas and Modeling • Recognize the need for and apply formulas and mathematical models when appropriate. • Apply formulas for slope/average rate of change, linear growth/decrease, and the Pythagorean Theorem • Use unfamiliar formulas appropriately in context • Create linear or piecewise linear models for given data, as appropriate • Identify positive, negative, strong, and weak linear correlation • Use technology such as Excel to perform a linear regression on data • Determine when it is appropriate to use a linear regression to interpolate/extrapolate from data, and do so when appropriate ratios, rates, percentages, and proportions

Required materials

This course uses materials generated by the COCC math department faculty.