MATH-0990: MATH LITERACY FOR COLLEGE STUDENTS

Cuyahoga Community College

Viewing:MATH-0990 : Math Literacy for College Students

Board of Trustees:
2018-03-22

Academic Term:
Spring 2019

Subject Code
MATH - Mathematics

Course Number:
0990

Title:
Math Literacy for College Students

Catalog Description:
Course integrates numeracy, proportional reasoning, algebraic reasoning, and functions. Students will develop conceptual and procedural tools that support the use of key mathematical concepts in a variety of ways. Contexts include personal finance, medical literacy, and citizenship.

Credit Hour(s):
4

Lecture Hour(s):
4

Requisites

Prerequisite and Corequisite
MATH-0910 Basic Arithmetic and Pre-Algebra; or sufficient score on placement test; or departmental approval.

I. ACADEMIC CREDIT

Academic Credit According to the Ohio Department of Higher Education, one (1) semester hour of college credit will be awarded for each lecture hour. Students will be expected to work on out-of-class assignments on a regular basis which, over the length of the course, would normally average two hours of out-of-class study for each hour of formal class activity. For laboratory hours, one (1) credit shall be awarded for a minimum of three laboratory hours in a standard week for which little or no out-of-class study is required since three hours will be in the lab (i.e. Laboratory 03 hours). Whereas, one (1) credit shall be awarded for a minimum of two laboratory hours in a standard week, if supplemented by out-of-class assignments which would normally average one hour of out-of-class study preparing for or following up the laboratory experience (i.e. Laboratory 02 hours). Credit is also awarded for other hours such as directed practice, practicum, cooperative work experience, and field experience. The number of hours required to receive credit is listed under Other Hours on the syllabus. The number of credit hours for lecture, lab and other hours are listed at the beginning of the syllabus. Make sure you can prioritize your time accordingly. Proper planning, prioritization and dedication will enhance your success in this course.

The standard expectation for an online course is that you will spend 3 hours per week for each credit hour.

II. ACCESSIBILITY STATEMENT

If you need any special course adaptations or accommodations because of a documented disability, please notify your instructor within a reasonable length of time, preferably the first week of the term with formal notice of that need (i.e. an official letter from the Student Accessibility Services (SAS) office). Accommodations will not be made retroactively.

For specific information pertaining to ADA accommodation, please contact your campus SAS office or visit online at http://www.tri-c.edu/accessprograms. Blackboard accessibility information is available at http://access.blackboard.com.

Eastern (216) 987-2052 - Voice
Metropolitan (216) 987-4344 – Voice. (216) 987-4048 – TTY.
Western (216) 987-5079 – Voice. (216) 987-5117 – TTY.
III. ATTENDANCE TRACKING

Regular class attendance is expected. Tri-C is required by law to verify the enrollment of students who participate in federal Title IV student aid programs and/or who receive educational benefits through other funding sources. Eligibility for federal student financial aid is based in part on enrollment status.

Students who do not attend classes for the entire term are required to withdraw from the course(s). Additionally, students who withdraw from a course or stop attending class without officially withdrawing may be required to return all or a portion of their financial aid based on the date of last attendance. Students who do not attend the full session are responsible for withdrawing from the course(s).

Tri-C is responsible for identifying students who have not attended a course before financial aid funds can be applied to students’ accounts. Therefore, attendance is recorded in the following ways:

- For in-person and blended-learning courses, students are required to attend the course by the 15th day of the semester (or equivalent for terms shorter than five weeks) to be considered attending. Students who have not met all attendance requirements for in-person and blended courses, as described herein, within the first two weeks or equivalent, will be considered not attending.
- For online courses, students are required to login at least two times per week and submit one assignment per week for the first two weeks of the semester, or equivalent to the 15th day of the term. Students who have not met all attendance requirements for online courses, as described herein, within the first two weeks or equivalent, will be considered not attending.

At the conclusion of the first two weeks of a semester or equivalent, instructors report any registered students who have “Never Attended” a course. Those students will be administratively withdrawn from that course. However, after the time period in the previous paragraphs, if a student stops attending a class or wants or needs to withdraw, for any reason, it is the student’s responsibility to take action to withdraw from the course. Students must complete and submit the appropriate Tri-C form by the established withdrawal deadline.

Tri-C is required to ensure that students receive financial aid only for courses that they attend and complete. Students reported for not attending at least one of their registered courses will have all financial aid funds held until confirmation of attendance in registered courses has been verified. Students who fail to complete at least one course may be required to repay all or a portion of their federal financial aid funds and may be ineligible to receive future federal financial aid awards. Students who withdraw from classes prior to completing more than 60 percent of their enrolled class time may be subject to the required federal refund policy.

If illness or emergency should necessitate a brief absence from class, students should confer with instructors upon their return. Students having problems with coursework due to a prolonged absence should confer with the instructor or a counselor.

IV. LEARNING OUTCOMES ASSESSMENT

Occasionally, in addition to submitting assignments to their instructors for evaluation and a grade, students will also be asked to submit completed assignments, called ‘artifacts,’ for assessment of course and program outcomes and the College’s Essential Learning Outcomes (ELOs). The artifacts will be submitted in Blackboard or a similar technology. The level of mastery of the outcome demonstrated by the artifact DOES NOT affect the student’s grade or academic record in any way. However, some instructors require that students submit their artifact before receiving their final grade. Some artifacts will be randomly selected for assessment, which will help determine improvements and support needed to further student success. If you have any questions, please feel free to speak with your instructor or contact the Learning Outcomes Assessment office.

V. CONCEALED CARRY STATEMENT

College policy prohibits the possession of weapons on college property by students, faculty and staff, unless specifically approved in advance as a job-related requirement (i.e., Tri-C campus police officers) or, in accordance with Ohio law, secured in a parked vehicle in a designated parking area only by an individual in possession of a valid conceal carry permit.

As a Tri-C student, your behavior on campus must comply with the student code of conduct which is available on page 29 within the Tri-C student handbook, available athttp://www.tri-c.edu/student-resources/documents/studenthandbook.pdfYou must also comply with the College's Zero Tolerance for Violence on College Property available athttp://www.tri-c.edu/policies-and-procedures/documents/3354-1-20-10-zero-tolerance-for-violence-policy.pdf

Outcomes

Course Outcome(s):
Use operation sense and communicate verbally and symbolically the effects of common operations on numbers.

Essential Learning Outcome Mapping:
Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

Objective(s):
1. Demonstrate operation sense and communicate verbally and symbolically the effects of common operations on numbers.
2. Demonstrate competency in using, and an understanding of, magnitude in the context of place values, fractions, and numbers written in scientific notation.
3. Use estimation skills, knowing how and when to estimate results, to solve problems, detect errors, and check accuracy.
4. Apply quantitative reasoning to solve problems involving quantities or rates.
5. Demonstrate measurement sense.
6. Explain and interpret data, using measures of central tendency, measures of variation, and mathematical models.
7. Read and make decisions based upon data from line graphs, bar graphs, and charts.

Course Outcome(s):
Represent proportional relationships and solve problems that require an understanding of ratios, rates, proportions, and scaling.

Essential Learning Outcome Mapping:
Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

Objective(s):
1. Apply quantitative reasoning strategies to solve real-world problems with proportional relationships based on an understanding that derived quantities may be described with whole numbers, fractions, or decimals, or in a combinations of these, and that to fully explain these relationships, units must be used.
2. Recognize proportional relationships from verbal and numeric representations.
3. Compare proportional relationships represented in different ways.

Course Outcome(s):
Reason using the language and structure of algebra to investigate, represent, and solve problems.

Essential Learning Outcome Mapping:
Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

Objective(s):
1. Understand various uses of variables to represent quantities or attributes.
2. Describe the effect that a change in the value of one variable has on the value(s) of other variables in the algebraic relationship.
3. Construct and use equations or inequalities to represent relationships involving one or more unknown or variable quantities to solve problems. Identify when there is insufficient information given to solve a problem.

Course Outcome(s):
Represent relationships between quantities in multiple ways and solve problems that require an understanding of functions.

Objective(s):
1. Translate problems from a variety of contexts into a mathematical representation and vice versa.
2. Describe the behavior of common types of functions using expressions, graphs, and tables.
3. Identify when a linear model or trend is appropriate for data, when a linear model does not appear to be appropriate, and know how to explore the applicability of other models.
4. Identify important characteristics of functions in various representations.
5. Use appropriate terms and units to describe rate of change.
6. Explain that abstract mathematical models used to characterize real-world scenarios or physical relationships are not always exact and may be subject to error from many sources, including variability.

Methods of Evaluation:
1. Exams
2. Quizzes
3. Homework
4. In class collaborative work
5. Comprehensive final exam
6. Online coursework
7. Class participation
Course Content Outline:

1. Real numbers
   a. Operations on real numbers
   b. Order of operations
   c. Data presentation
   d. Inequalities
   e. Properties of real numbers
   f. Like terms
   g. Algebraic expressions
   h. Translation into algebraic expressions
2. Linear equations and inequalities in one variable
   a. Linear equations
   b. Addition property and multiplication property of equality
   c. Solutions of linear equations
   d. Order of operations in solving linear equations
   e. Fractional and decimal coefficients
   f. Translation into algebraic equations
   g. Literal equations
   h. Applications involving personal finance, citizenship, and global awareness.
   i. Rates, ratios, and proportions
   j. Applications involving rates, ratios, and proportions
   k. Addition property and multiplication proper of inequality
   l. Applications involving linear inequalities
   m. Translation into algebraic inequalities
3. The rectangular coordinate system, lines and linear inequalities
   a. Rectangular coordinate system
   b. Coordinates to points
   c. Plot points
   d. Slope of a line
   e. Rate of change
   f. Slope-intercept form of a linear equation
   g. Vertical lines
   h. Horizontal lines
   i. Applications involving linear equations
   j. Construction of a table to graph lines
4. Systems of linear equations
   a. Ordered pairs as solutions of systems of linear systems
   b. Applications involving linear systems

Resources


Resources Other


The instructional materials used in this course are part of QUANTWAY™, A Pathway Through College-Level Quantitative Reasoning, which is a product of a Carnegie Networked Improvement Community that seeks to advance student success. The original version of this work, version 1.0, was created by The Charles A. Dana Center at The University of Texas at Austin under sponsorship of the Carnegie Foundation for the Advancement of Teaching. This version and all subsequent versions, result from the continuous improvement efforts of the Carnegie Networked Improvement Community. The network brings together community college faculty and staff, designers, researchers and developers. It is a research and development community that seeks to harvest the wisdom of its diverse participants through systematic and disciplined inquiry to improve developmental mathematics instruction. For more information on the Quantway™ Networked Improvement Community, please visit carnegiefoundation.org.