
COURSE PREFIX/NO:	MAT 103
COURSE TITLE:	Quantitative Reasoning
LEC HRS/WEEK:	3.0
LAB HRS/WEEK:	0.0
CREDIT HRS/SEMESTER:	3.0

[Distance Learning Attendance/VA Statement](#)
[Textbook Information](#)

COURSE DESCRIPTION

This course is designed to develop quantitative reasoning and critical thinking skills. Topics include logic and computers, probability and statistics, financial mathematics, and additional applications selected to address areas of contemporary interest.

COURSE COMPETENCIES

Module 1: Logical Reasoning

- Determine whether arguments are valid or invalid using truth tables, Venn diagrams or set theory
- Identify Inductive and Deductive Reasoning
- Create arguments using Inductive or Deductive Reasoning
- Solve problems using conversions to include the metric and US customary systems
- Write large or small numbers in scientific notation
- Determine accuracy and precision using significant digits
- Calculate relative value with index numbers

Module 2: Money Management and Personal Finance

- Create a budget
- Calculate simple and compound interest
- Calculate present and future value of money
- Calculate installment loans and mortgage payments
- Define federal income tax terms
- Perform basic tax calculations

Module 3: Applications in Statistics

- Organize data using tables and graphs
- Identify and calculate measures of central tendency
- Identify and calculate measures of variation
- Create a five-number summary to make a box and whisker plot
- Solve problems using the normal probability distribution

Module 4: Probability and Modeling

- Calculate probability using theoretical and empirical methods
- Calculate probabilities of simple and compound events

- Solve problems using counting methods
- Calculate expected values
- Identify statistical applications in everyday life

ACADEMIC INTEGRITY

Students are bound by the policies stated in the York Technical College Catalog and Handbook. A student violating these policies will be subject to academic discipline.

MINIMAL STANDARDS

An average of 60% is required for a grade of D for this course. Most colleges require a grade of C (a minimum average of 70%) to transfer this course.

EVALUATION STRATEGIES/GRADING

The final course grade will be determined by a student's performance on the combination of the four module grades plus a final examination. Each module grade may be comprised of objective and/or essay-type questions, homework, individual or group projects, quizzes, etc., as required by the instructor. The modules will be evaluated as follows:

Module 1: 20%

Module 2: 20%

Module 3: 20%

Module 4: 20%

The final examination will be evaluated as 20% of the final grade.

Grading Scale

A 90 – 100

B 80 – 89

C 70 – 79

D 60 – 69

F Below 60

COURSE REQUIREMENTS

See the York Technical College Catalog and Handbook for attendance, withdrawal, and student conduct policies.

ENTRY- LEVEL SKILLS

The student entering this course must be able to perform basic arithmetic and algebraic operations and have good reading skills.

PREREQUISITE – MAT 101 or equivalent

CO-REQUISITES – None

Disabilities Statement: Any student who feels s/he may need an accommodation based on the impact of a disability should contact the Special Resources Offices (SR) at 803-327-8007 in the 300 area of Student Services. The SRO coordinates reasonable accommodations for students with documented disabilities.